

=> file caplus

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FILE COVERS 1907 - 17 Jun 2002 VOL 136 ISS 25  
FILE LAST UPDATED: 16 Jun 2002 (20020616/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

CAS roles have been modified effective December 16, 2001. Please check your SDI profiles to see if they need to be revised. For information on CAS roles, enter HELP ROLES at an arrow prompt or use the CAS Roles thesaurus (/RL field) in this file.

=> d que L7

L1 2573 SEA FILE=CAPLUS ABB=ON PLU=ON STARCH (3A) OXIDI?  
L2 1 SEA FILE=REGISTRY ABB=ON PLU=ON HYDROGEN PEROXIDE/CN  
L3 62287 SEA FILE=CAPLUS ABB=ON PLU=ON L2  
L4 147980 SEA FILE=CAPLUS ABB=ON PLU=ON L3 OR H2O2  
L5 114 SEA FILE=CAPLUS ABB=ON PLU=ON L1 AND L4  
L6 773 SEA FILE=CAPLUS ABB=ON PLU=ON TAPIOCA (2A) STARCH  
L7 1 SEA FILE=CAPLUS ABB=ON PLU=ON L5 AND L6

=> d que L13

L1 2573 SEA FILE=CAPLUS ABB=ON PLU=ON STARCH (3A) OXIDI?  
L2 1 SEA FILE=REGISTRY ABB=ON PLU=ON HYDROGEN PEROXIDE/CN  
L3 62287 SEA FILE=CAPLUS ABB=ON PLU=ON L2  
L4 147980 SEA FILE=CAPLUS ABB=ON PLU=ON L3 OR H2O2  
L5 114 SEA FILE=CAPLUS ABB=ON PLU=ON L1 AND L4  
L8 9094 SEA FILE=CAPLUS ABB=ON PLU=ON POTATO (2A) STARCH  
L9 16 SEA FILE=CAPLUS ABB=ON PLU=ON L5 AND L8  
L12 2050783 SEA FILE=CAPLUS ABB=ON PLU=ON CATION? OR ANION? OR ION? OR AMPHOTERIC  
L13 5 SEA FILE=CAPLUS ABB=ON PLU=ON L9 AND L12

=> d que L15

L1 2573 SEA FILE=CAPLUS ABB=ON PLU=ON STARCH (3A) OXIDI?  
L2 1 SEA FILE=REGISTRY ABB=ON PLU=ON HYDROGEN PEROXIDE/CN  
L3 62287 SEA FILE=CAPLUS ABB=ON PLU=ON L2  
L4 147980 SEA FILE=CAPLUS ABB=ON PLU=ON L3 OR H2O2  
L5 114 SEA FILE=CAPLUS ABB=ON PLU=ON L1 AND L4  
L14 5067 SEA FILE=CAPLUS ABB=ON PLU=ON BINDER AND ((PAPER OR SURFACE) (3A) COATING)  
L15 4 SEA FILE=CAPLUS ABB=ON PLU=ON L5 AND L14

*Additional background  
search on oxidized  
starch made by  
process known in  
the art and  
limitations of  
claims 5-7  
and 11-18.  
~~These~~ limitations of  
claim 1 (H<sub>2</sub>O<sub>2</sub> &  
C<sub>4</sub>2+) not included*

Point of Contact:  
Thomas G. Larson, Ph.D.  
703-308-7309  
CRM1, Rm. 6 B 01

=&gt; d que L18

L1 2573 SEA FILE=CAPLUS ABB=ON PLU=ON STARCH (3A) OXIDI?  
 L2 1 SEA FILE=REGISTRY ABB=ON PLU=ON HYDROGEN PEROXIDE/CN  
 L3 62287 SEA FILE=CAPLUS ABB=ON PLU=ON L2  
 L4 147980 SEA FILE=CAPLUS ABB=ON PLU=ON L3 OR H2O2  
 L5 114 SEA FILE=CAPLUS ABB=ON PLU=ON L1 AND L4  
 L16 161577 SEA FILE=CAPLUS ABB=ON PLU=ON ADHESIVE  
 L17 26 SEA FILE=CAPLUS ABB=ON PLU=ON L5 AND L16  
 L18 9 SEA FILE=CAPLUS ABB=ON PLU=ON L17 AND CATALYST

=&gt; d que L20

L1 2573 SEA FILE=CAPLUS ABB=ON PLU=ON STARCH (3A) OXIDI?  
 L2 1 SEA FILE=REGISTRY ABB=ON PLU=ON HYDROGEN PEROXIDE/CN  
 L3 62287 SEA FILE=CAPLUS ABB=ON PLU=ON L2  
 L4 147980 SEA FILE=CAPLUS ABB=ON PLU=ON L3 OR H2O2  
 L5 114 SEA FILE=CAPLUS ABB=ON PLU=ON L1 AND L4  
 L19 855 SEA FILE=CAPLUS ABB=ON PLU=ON YARN (3A) SIZING  
 L20 0 SEA FILE=CAPLUS ABB=ON PLU=ON L5 AND L19

=&gt; d que L22

L1 2573 SEA FILE=CAPLUS ABB=ON PLU=ON STARCH (3A) OXIDI?  
 L10 2527372 SEA FILE=CAPLUS ABB=ON PLU=ON DERIV? OR MODIFI?  
 L19 855 SEA FILE=CAPLUS ABB=ON PLU=ON YARN (3A) SIZING  
 L21 13 SEA FILE=CAPLUS ABB=ON PLU=ON L1 AND L19  
 L22 5 SEA FILE=CAPLUS ABB=ON PLU=ON L21 AND L10

=&gt; d que L24

L1 2573 SEA FILE=CAPLUS ABB=ON PLU=ON STARCH (3A) OXIDI?  
 L2 1 SEA FILE=REGISTRY ABB=ON PLU=ON HYDROGEN PEROXIDE/CN  
 L3 62287 SEA FILE=CAPLUS ABB=ON PLU=ON L2  
 L4 147980 SEA FILE=CAPLUS ABB=ON PLU=ON L3 OR H2O2  
 L5 114 SEA FILE=CAPLUS ABB=ON PLU=ON L1 AND L4  
 L23 78888 SEA FILE=CAPLUS ABB=ON PLU=ON GLASS (2W) FIBER  
 L24 1 SEA FILE=CAPLUS ABB=ON PLU=ON L5 AND L23

=&gt; d que L26

L1 2573 SEA FILE=CAPLUS ABB=ON PLU=ON STARCH (3A) OXIDI?  
 L23 78888 SEA FILE=CAPLUS ABB=ON PLU=ON GLASS (2W) FIBER  
 L25 18 SEA FILE=CAPLUS ABB=ON PLU=ON L1 AND L23  
 L26 4 SEA FILE=CAPLUS ABB=ON PLU=ON L25 AND COATING

=&gt; d que L28

L1 2573 SEA FILE=CAPLUS ABB=ON PLU=ON STARCH (3A) OXIDI?  
 L2 1 SEA FILE=REGISTRY ABB=ON PLU=ON HYDROGEN PEROXIDE/CN  
 L3 62287 SEA FILE=CAPLUS ABB=ON PLU=ON L2  
 L4 147980 SEA FILE=CAPLUS ABB=ON PLU=ON L3 OR H2O2  
 L5 114 SEA FILE=CAPLUS ABB=ON PLU=ON L1 AND L4  
 L27 2099 SEA FILE=CAPLUS ABB=ON PLU=ON (ABRASIVE OR SAND OR EMERY)  
 (2A) PAPER OR SANDPAPER  
 L28 0 SEA FILE=CAPLUS ABB=ON PLU=ON L5 AND L27

=&gt; d que L31

L1 2573 SEA FILE=CAPLUS ABB=ON PLU=ON STARCH (3A) OXIDI?  
 L27 2099 SEA FILE=CAPLUS ABB=ON PLU=ON (ABRASIVE OR SAND OR EMERY)  
 (2A) PAPER OR SANDPAPER  
 L29 9 SEA FILE=CAPLUS ABB=ON PLU=ON L1 AND L27  
 L31 8 SEA FILE=CAPLUS ABB=ON PLU=ON L29 AND (ADHESIVE OR COATING  
 OR ADDITIVE)

=> d que L33

L1 2573 SEA FILE=CAPLUS ABB=ON PLU=ON STARCH (3A) OXIDI?  
 L2 1 SEA FILE=REGISTRY ABB=ON PLU=ON HYDROGEN PEROXIDE/CN  
 L3 62287 SEA FILE=CAPLUS ABB=ON PLU=ON L2  
 L4 147980 SEA FILE=CAPLUS ABB=ON PLU=ON L3 OR H2O2  
 L5 114 SEA FILE=CAPLUS ABB=ON PLU=ON L1 AND L4  
 L32 19 SEA FILE=CAPLUS ABB=ON PLU=ON BLANKET(3A) ADHESIVE  
 L33 0 SEA FILE=CAPLUS ABB=ON PLU=ON L5 AND L32

=> d que L34

L1 2573 SEA FILE=CAPLUS ABB=ON PLU=ON STARCH (3A) OXIDI?  
 L32 19 SEA FILE=CAPLUS ABB=ON PLU=ON BLANKET(3A) ADHESIVE  
 L34 0 SEA FILE=CAPLUS ABB=ON PLU=ON L1 AND L32

=> d que L36

L1 2573 SEA FILE=CAPLUS ABB=ON PLU=ON STARCH (3A) OXIDI?  
 L35 36 SEA FILE=CAPLUS ABB=ON PLU=ON BLANKET(3A) (ADHESIVE OR GLUE  
 OR BINDER OR SIZING)  
 L36 0 SEA FILE=CAPLUS ABB=ON PLU=ON L1 AND L35

=> d que L38

L1 2573 SEA FILE=CAPLUS ABB=ON PLU=ON STARCH (3A) OXIDI?  
 L2 1 SEA FILE=REGISTRY ABB=ON PLU=ON HYDROGEN PEROXIDE/CN  
 L3 62287 SEA FILE=CAPLUS ABB=ON PLU=ON L2  
 L4 147980 SEA FILE=CAPLUS ABB=ON PLU=ON L3 OR H2O2  
 L5 114 SEA FILE=CAPLUS ABB=ON PLU=ON L1 AND L4  
 L37 434316 SEA FILE=CAPLUS ABB=ON PLU=ON FOOD OR FEED  
 L38 7 SEA FILE=CAPLUS ABB=ON PLU=ON L5 AND L37

=> d que L45

L1 2573 SEA FILE=CAPLUS ABB=ON PLU=ON STARCH (3A) OXIDI?  
 L2 1 SEA FILE=REGISTRY ABB=ON PLU=ON HYDROGEN PEROXIDE/CN  
 L3 62287 SEA FILE=CAPLUS ABB=ON PLU=ON L2  
 L4 147980 SEA FILE=CAPLUS ABB=ON PLU=ON L3 OR H2O2  
 L5 114 SEA FILE=CAPLUS ABB=ON PLU=ON L1 AND L4  
 L39 30 SEA FILE=CAPLUS ABB=ON PLU=ON ALKYL SUCCINIC ANHYDRIDE  
 L42 343 SEA FILE=CAPLUS ABB=ON PLU=ON ALKYL KETENE (3A) DIMER  
 L43 772 SEA FILE=CAPLUS ABB=ON PLU=ON ALKYL ISOCYANATE  
 L44 1143 SEA FILE=CAPLUS ABB=ON PLU=ON L39 OR L42 OR L43  
 L45 1 SEA FILE=CAPLUS ABB=ON PLU=ON L5 AND L44

=> d que L46

L1 2573 SEA FILE=CAPLUS ABB=ON PLU=ON STARCH (3A) OXIDI?  
 L39 30 SEA FILE=CAPLUS ABB=ON PLU=ON ALKYL SUCCINIC ANHYDRIDE  
 L42 343 SEA FILE=CAPLUS ABB=ON PLU=ON ALKYL KETENE (3A) DIMER  
 L43 772 SEA FILE=CAPLUS ABB=ON PLU=ON ALKYL ISOCYANATE  
 L44 1143 SEA FILE=CAPLUS ABB=ON PLU=ON L39 OR L42 OR L43

L46 11 SEA FILE=CAPLUS ABB=ON PLU=ON L1 AND L44

=> s l7 or l13 or l15 or l18 or l20 or l22 or l24 or l26 or l28 or l31 or l33 or  
l34 or l36 or l38 or l45 or l46

L87 47 L7 OR L13 OR L15 OR L18 OR L20 OR L22 OR L24 OR L26 OR L28 OR  
L31 OR L33 OR L34 OR L36 OR L38 OR L45 OR L46

=> file wpids

FILE 'WPIDS' ENTERED AT 17:39:46 ON 17 JUN 2002

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FILE LAST UPDATED: 13 JUN 2002

<20020613/UP>

MOST RECENT DERWENT UPDATE

200237

<200237/DW>

DERWENT WORLD PATENTS INDEX SUBSCRIBER FILE, COVERS 1963 TO DATE

>>> The BATCH option for structure searches has been  
enabled in WPINDEX/WPIDS and WPIX >>>

>>> PATENT IMAGES AVAILABLE FOR PRINT AND DISPLAY >>>

>>> FOR DETAILS OF THE PATENTS COVERED IN CURRENT UPDATES,  
SEE <http://www.derwent.com/dwpi/updates/dwpcov/index.html> <<<

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<http://www.derwent.com/data/stn3.pdf> <<<

>>> FOR INFORMATION ON ALL DERWENT WORLD PATENTS INDEX USER  
GUIDES, PLEASE VISIT:  
[http://www.derwent.com/userguides/dwpi\\_guide.html](http://www.derwent.com/userguides/dwpi_guide.html) <<<

=> d que 156

L48	612	SEA FILE=WPIDS ABB=ON	PLU=ON	STARCH (3A) OXIDI?
L50	439	SEA FILE=WPIDS ABB=ON	PLU=ON	TAPIOCA (2A) STARCH
L52	14	SEA FILE=WPIDS ABB=ON	PLU=ON	L48 AND L50
L53	1885	SEA FILE=WPIDS ABB=ON	PLU=ON	POTATO (2A) STARCH
L55	44	SEA FILE=WPIDS ABB=ON	PLU=ON	L48 AND L53
L56	10	SEA FILE=WPIDS ABB=ON	PLU=ON	L52 AND L55

=> d que 159

L47	25706	SEA FILE=WPIDS ABB=ON	PLU=ON	HYDROGEN PEROXIDE OR HYDROGEN PER OXIDE OR H2O2
L48	612	SEA FILE=WPIDS ABB=ON	PLU=ON	STARCH (3A) OXIDI?
L49	19	SEA FILE=WPIDS ABB=ON	PLU=ON	L47 AND L48
L57	325599	SEA FILE=WPIDS ABB=ON	PLU=ON	CATION? OR ANION? OR ION? OR AMPHOTERIC
L59	3	SEA FILE=WPIDS ABB=ON	PLU=ON	L49 AND L57

=> d que 161

L47	25706	SEA FILE=WPIDS ABB=ON	PLU=ON	HYDROGEN PEROXIDE OR HYDROGEN PER OXIDE OR H2O2
L48	612	SEA FILE=WPIDS ABB=ON	PLU=ON	STARCH (3A) OXIDI?
L49	19	SEA FILE=WPIDS ABB=ON	PLU=ON	L47 AND L48
L60	5609	SEA FILE=WPIDS ABB=ON	PLU=ON	BINDER AND ((PAPER OR SURFACE) (3A) COATING)
L61	1	SEA FILE=WPIDS ABB=ON	PLU=ON	L49 AND L60

=> d que 164

L47	25706	SEA FILE=WPIDS	ABB=ON	PLU=ON	HYDROGEN PEROXIDE OR HYDROGEN PER OXIDE OR H2O2
L48	612	SEA FILE=WPIDS	ABB=ON	PLU=ON	STARCH (3A) OXIDI?
L49	19	SEA FILE=WPIDS	ABB=ON	PLU=ON	L47 AND L48
L63	258615	SEA FILE=WPIDS	ABB=ON	PLU=ON	ADHESIVE
L64	6	SEA FILE=WPIDS	ABB=ON	PLU=ON	L49 AND L63

=> d que 166

L48	612	SEA FILE=WPIDS	ABB=ON	PLU=ON	STARCH (3A) OXIDI?
L65	415	SEA FILE=WPIDS	ABB=ON	PLU=ON	YARN (3A) SIZING
L66	3	SEA FILE=WPIDS	ABB=ON	PLU=ON	L48 AND L65

=> d que 169

L48	612	SEA FILE=WPIDS	ABB=ON	PLU=ON	STARCH (3A) OXIDI?
L67	4826	SEA FILE=WPIDS	ABB=ON	PLU=ON	GLASS (2W) FIBER
L69	2	SEA FILE=WPIDS	ABB=ON	PLU=ON	L48 AND L67

=> d que 171

L48	612	SEA FILE=WPIDS	ABB=ON	PLU=ON	STARCH (3A) OXIDI?
L70	1413	SEA FILE=WPIDS	ABB=ON	PLU=ON	(ABRASIVE OR SAND OR EMERY) (2A) PAPER OR SANDPAPER
L71	2	SEA FILE=WPIDS	ABB=ON	PLU=ON	L48 AND L70

=> d que 177

L48	612	SEA FILE=WPIDS	ABB=ON	PLU=ON	STARCH (3A) OXIDI?
L72	573909	SEA FILE=WPIDS	ABB=ON	PLU=ON	FOOD OR FEED
L74	52	SEA FILE=WPIDS	ABB=ON	PLU=ON	L48 AND L72
L77	8	SEA FILE=WPIDS	ABB=ON	PLU=ON	L74 AND ADDITIVE

=> d que 179

L48	612	SEA FILE=WPIDS	ABB=ON	PLU=ON	STARCH (3A) OXIDI?
L78	61	SEA FILE=WPIDS	ABB=ON	PLU=ON	BLANKET(3A) ADHESIVE
L79	2	SEA FILE=WPIDS	ABB=ON	PLU=ON	L78 AND L48

=> d que 186

L48	612	SEA FILE=WPIDS	ABB=ON	PLU=ON	STARCH (3A) OXIDI?
L81	51	SEA FILE=WPIDS	ABB=ON	PLU=ON	ALKYL SUCCINIC ANHYDRIDE
L82	316	SEA FILE=WPIDS	ABB=ON	PLU=ON	ALKYL KETENE (3A) DIMER
L83	309	SEA FILE=WPIDS	ABB=ON	PLU=ON	ALKYL ISOCYANATE
L84	670	SEA FILE=WPIDS	ABB=ON	PLU=ON	(L81 OR L82 OR L83)
L86	10	SEA FILE=WPIDS	ABB=ON	PLU=ON	L48 AND L84

=> s 156 or 159 or 161 or 164 or 166 or 169 or 171 or 177 or 179 or 186

L88	35	L56 OR L59 OR L61 OR L64 OR L66 OR L69 OR L71 OR L77 OR L79 OR L86
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=> dup rem 187 188

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 PROCESSING COMPLETED FOR L87  
 PROCESSING COMPLETED FOR L88  
 L89 78 DUP REM L87 L88 (4 DUPLICATES REMOVED)

=> d ibib ab 1-78

L89 ANSWER 1 OF 78 WPIDS (C) 2002 THOMSON DERWENT  
 ACCESSION NUMBER: 2002-216909 [27] WPIDS  
 DOC. NO. CPI: C2002-066286  
 TITLE: Detergent composition for removing starch-containing  
 stains on fabrics, comprises cyclodextrin  
 glucanotransferase enzyme and detergent ingredient which  
 is non-ionic surfactant, protease and bleaching agent.  
 DERWENT CLASS: A97 D16 D25 E19  
 INVENTOR(S): PINTENS, A; SMETS, J  
 PATENT ASSIGNEE(S): (PROC) PROCTER & GAMBLE CO  
 COUNTRY COUNT: 91  
 PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 2002002725	A1	20020110	(200227)*	EN	97
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TZ UG ZW					
W: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW					
US 2002032142	A1	20020314	(200227)		
AU 2000060630	A	20020114	(200237)		

#### APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 2002002725	A1	WO 2000-US18119	20000630
US 2002032142	A1	US 2001-888714	20010625
AU 2000060630	A	AU 2000-60630	20000630
		WO 2000-US18119	20000630

#### FILING DETAILS:

PATENT NO	KIND	PATENT NO
AU 2000060630	A Based on	WO 200202725

PRIORITY APPLN. INFO: WO 2000-US18119 20000630

AB WO 200202725 A UPAB: 20020429

NOVELTY - A detergent composition comprises a cyclodextrin  
 glucanotransferase enzyme and a detergent ingredient. The detergent  
 ingredient is a non-ionic surfactant, a protease and a bleaching agent.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for  
 USE - For use as laundry, dish-washing, hand and machine  
 dish-washing, fabric care, and hard surface cleaner compositions, and also  
 as detergent additive products to supplement or boost  
 performance of conventional detergent compositions, in liquid, paste,  
 gels, bars, tablets, sprays, foam, powder and granular form, for use in

soaking and pre-treatment of stained fabrics, rinse added fabric softener compositions, and compositions for use in general household hand surface cleaning operations, for hydrolyzing retrograded and raw starch, for removing food stains such as rice, spaghetitis, potatoes, corn and cereals, and also starch-containing stains and soils on fabrics, dish-ware, and other hard surfaces, such as utensils in kitchen, laundry basket and dish-washing machine, and for inhibiting dye transfer from one fabric to another of solubilized and suspended dyes during fabric laundering. The cyclodextrin glucanotransferase enzyme and the detergent ingredient are used in the detergent composition for the hydrolysis of retrograded and raw starch (claimed).

**ADVANTAGE** - The detergent composition produces excellent whiteness maintenance and dingy cleaning, and provides synergistic removal of starch-containing stains-soils and control of undesired odor, when compared conventionally. The cyclodextrins in the composition, efficiently improves solubility and stability, reduces chemical reactivity and volatility, and is efficiently utilized in food, cosmetic, chemical and pharmaceutical industries. The cyclodextrin glucanotransferase has favorable starch-degrading activity and transglycosylation activity, and is inexpensive and eco-friendly. The cyclodextrin glucanotransferase shows increased product selectivity and reduced product inhibition, when compared to precursor enzyme. The starch-containing stains/soils even contained in complexed stains is more easily hydrolyzed by protease enzyme, and synergistic break down of the starch soil is performed by the cyclodextrin glucanotransferase and the non-ionic surfactant. The bleaching agent **oxidizes** and solubilizes the **starch** material, and hence the starch is more easily removed by the cyclodextrin glucanotransferase and it results in less redeposition on the surface to be cleaned. The detergent composition provides excellent dye transfer inhibiting properties and does not adversely affect the cleaning performance, due to the presence of N-vinylimidazole N-vinylpyrrolidone copolymers.

Dwg.0/0

L89 ANSWER 2 OF 78 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 1  
 ACCESSION NUMBER: 2000:742147 CAPLUS  
 DOCUMENT NUMBER: 133:311086  
 TITLE: **Oxidized starch**, its manufacture  
 and use, especially as superabsorbent  
 INVENTOR(S): Fisher, Richard; Herrmann, Wolfgang A.; Zoller, P.  
 Jochen  
 PATENT ASSIGNEE(S): Celanese Chemicals Europe G.m.b.H., Germany  
 SOURCE: PCT Int. Appl., 28 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000061639	A1	20001019	WO 2000-EP2456	20000321
W: US				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
DE 19914067	C1	20010315	DE 1999-19914067	19990327
PRIORITY APPLN. INFO.:			DE 1999-19914067 A 19990327	
OTHER SOURCE(S):			MARPAT 133:311086	
AB The title starch, useful as superabsorbent, seed and/or fertilizer carrier or soil improving agent, as material for galenicals or in				

**adhesives** and binders, is manufd. by **oxidizing** native **starch** in an acid solvent by (a) introducing 0.1-1.9 equiv (based on anhydroglucose units present in the native starch) of the oxidant in acid the starch soln., (b) carrying out the oxidn. in the presence of a **catalyst** contg. (i)  $\text{MeReO}_3$  or an alkylrhenium oxide or  $\text{ReO}_3$  or  $\text{Re}_2\text{O}_7$ , (ii) a di-tertiary alkyl nitroxyl, and (iii) hydrogen halide dissolved in a carboxylic acid, (c) carrying out oxidn. in  $\text{H}_2\text{O}$ , a carboxylic acid, an org. solvent or a mixt. contg. .gtoreq.2 of these ingredients, at 0-50.degree.. Thus, a superabsorbent was prepd. by oxidn. of starch suspended in  $\text{AcOH}$  with 30% aq.  $\text{H}_2\text{O}_2$ , in the presence of  $\text{MeReO}_3$  and  $\text{HBr}$ .

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L89 ANSWER 3 OF 78 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 2  
 ACCESSION NUMBER: 2000:191115 CAPLUS  
 DOCUMENT NUMBER: 132:224042  
 TITLE: Hydrogen peroxide oxidation of starch  
 INVENTOR(S): Kesselmans, Ronald Peter Wilhelmus; Bleeker, Ido Pieter  
 PATENT ASSIGNEE(S): Cooperatieve Verkoop- En Productievereniging Van Aardappelmeel En Derivaten, Neth.  
 SOURCE: PCT Int. Appl., 23 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000015670	A1	20000323	WO 1999-NL568	19990913
W:		AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM		
RW:		GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG		
AU 9956562	A1	20000403	AU 1999-56562	19990913
BR 9913581	A	20010522	BR 1999-13581	19990913
EP 1112287	A1	20010704	EP 1999-943485	19990913
EP 1112287	B1	20020605		
R:		AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO		

PRIORITY APPLN. INFO.: EP 1998-203043 A 19980911  
 WO 1999-NL568 W 19990913

AB A root or tuber starch, comprising .gtoreq.95% (based on dry starch) of amylopectin, or a deriv. of such starch is treated with  $\text{H}_2\text{O}_2$  in the presence of  $\text{Cu}^{2+}$  ion catalyst. Under the process condition cereal and fruit starches are not degraded to a sufficient extent to obtained a product having desired characteristics. The use of **oxidized starch as binder in paper coatings**, in **surface sizes and adhesives**, as **food additive and emulsifier for paper sizing agents** is claimed.

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT



L89 ANSWER 4 OF 78 WPIDS (C) 2002 THOMSON DERWENT  
 ACCESSION NUMBER: 2000-205455 [18] WPIDS  
 DOC. NO. CPI: C2000-063296  
 TITLE: Oxidation of starch for use e.g., as binder in paper  
 coatings, involves subjecting an **oxidized**  
**starch** to an alkaline treatment at pH higher than  
 10.  
 DERWENT CLASS: A11 D13 F06 F09 G02 G03  
 INVENTOR(S): BROUWER, P H; KESSELMANS, R P W; TER VEER, B C A;  
 WIELEMA, T A  
 PATENT ASSIGNEE(S): (CVPA) COOP VERKOOP PROD VAN AARDAPP AVEBE  
 COUNTRY COUNT: 87  
 PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 2000006607	A1	20000210	(200018)*	EN	31
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SL SZ UG ZW					
W: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG US UZ VN YU ZA ZW					
AU 9951995	A	20000221	(200029)		
BR 9912634	A	20010424	(200128)		
EP 1109836	A1	20010627	(200137)	EN	
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI					
CN 1317016	A	20011010	(200207)		

## APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 2000006607	A1	WO 1999-NL484	19990728
AU 9951995	A	AU 1999-51995	19990728
BR 9912634	A	BR 1999-12634	19990728
		WO 1999-NL484	19990728
EP 1109836	A1	EP 1999-937105	19990728
		WO 1999-NL484	19990728
CN 1317016	A	CN 1999-810481	19990728

## FILING DETAILS:

PATENT NO	KIND	PATENT NO
AU 9951995	A Based on	WO 200006607
BR 9912634	A Based on	WO 200006607
EP 1109836	A1 Based on	WO 200006607

PRIORITY APPLN. INFO: EP 1998-202593 19980731

AB WO 200006607 A UPAB: 20000412

NOVELTY - **Starch** is **oxidized** by treating a root or  
 tuber starch comprising at least 95 wt.% amylopectin, based on dry  
 substance of the starch, with an alkali metal hypochlorite and subjecting  
 the resulting product to an alkaline treatment. The alkaline treatment  
 comprises keeping the product at 20 - 50 deg. C for 15 minutes and at pH  
 higher than 10.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for (A)  
 an **oxidized starch** obtainable from the process; and

(B) the use of the **oxidized starch**.

USE - The **oxidized starch** is used as a binder in paper coatings or surface sizings, as an adhesive, a protective colloid for stabilizing emulsions, in warp yarn sizing, as a coating of **glass fibers**, as a **blanket adhesive**, and in **abrasive paper** or in food products (all claimed).

ADVANTAGE - The oxidation process can be carried out in a shorter period of time and requires only small amounts of **oxidizing agent**. The **oxidized starch** obtained has an excellent stability of the viscosity and contains much smaller amounts of chlorine compared to the conventional oxidation process.  
Dwg.0/0

L89 ANSWER 5 OF 78 WPIDS (C) 2002 THOMSON DERWENT  
ACCESSION NUMBER: 2000-378327 [33] WPIDS  
CROSS REFERENCE: 2000-041907 [04]  
DOC. NO. CPI: C2000-114709  
TITLE: Polysaccharide for reducing viscosity resulting from psyllium has specified molecular weight and viscosity.  
DERWENT CLASS: A11 A97 D13  
INVENTOR(S): AKIYAMA, D; DATE, K; KAWAMURA, Y; NAKAZEKO, T; UEDA, K  
PATENT ASSIGNEE(S): (NISP) NISSIN SHOKUHIN KAISHA LTD; (NISP) NISSHIN FOODS KK  
COUNTRY COUNT: 29  
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
EP 1008306	A2	20000614	(200033)*	EN	30
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI					
JP 3068078	B1	20000724	(200040)		6
CA 2292056	A1	20000610	(200043)	EN	
JP 2000224975	A	20000815	(200044)		7
CN 1256901	A	20000621	(200049)		
JP 2001103934	A	20010417	(200128)		9
US 2001051203	A1	20011213	(200204)		

## APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
EP 1008306	A2	EP 1999-309906	19991209
JP 3068078	B1	JP 1999-26293	19990203
CA 2292056	A1	CA 1999-2292056	19991209
JP 2000224975	A	JP 1999-26293	19990203
CN 1256901	A	CN 1999-126137	19991210
JP 2001103934	A	JP 1999-284427	19991005
US 2001051203	A1 Div ex	US 1999-457168	19991208
		US 2001-861335	20010518

PRIORITY APPLN. INFO: JP 1999-284427 19991005; JP 1998-351363  
19981210; JP 1999-26293 19990203

AB EP 1008306 A UPAB: 20020117

NOVELTY - A polysaccharide for reducing the viscosity resulting from psyllium is characterized by the polysaccharide having a molecular weight of 20,000 or greater and a viscosity of an aqueous solution at 2 wt% of 9.0 cp or less (determined using a type B viscometer with Rotor No.1, at

60 rpm and 25 deg. C.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for: (1) a composition for addition into foods comprising psyllium and the polysaccharide; (2) a method for manufacturing a liquid food comprising (a) preparing an aqueous solution comprising the above, (b) packing the solution into a container followed by heat sealing and (c) sterilizing the solution by heating at any time prior to, during or following the packing step (b); (3) a powdered food for preparing a liquid food comprising psyllium and the polysaccharide.

USE - Useful as an ingredient of several kinds of foods containing psyllium which is known to result in high viscosity when incorporated into a hydrated condition.

ADVANTAGE - The polysaccharide is capable of suppressing the onset of the elevated viscosity and gel-forming characteristics resulting from psyllium in response to the hydration without deteriorating the physiological effects associated naturally with the psyllium, such as intestinal function-controlling effect etc.

Dwg.0/6

L89 ANSWER 6 OF 78 WPIDS (C) 2002 THOMSON DERWENT  
 ACCESSION NUMBER: 2000-483975 [43] WPIDS  
 DOC. NO. CPI: C2000-145845  
 TITLE: Particulate dry baking yeast coated or encapsulated with starch so as to protect it from the effects of air and thus give retention of activity over prolonged periods.  
 DERWENT CLASS: A97 D11 D16  
 INVENTOR(S): SEIBOLD, W  
 PATENT ASSIGNEE(S): (SEIB-I) SEIBOLD W  
 COUNTRY COUNT: 1  
 PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
DE 19900446	A1	20000713	(200043)*		7

#### APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
DE 19900446	A1	DE 1999-19900446	19990108

PRIORITY APPLN. INFO: DE 1999-19900446 19990108

AB DE 19900446 A UPAB: 20000907

NOVELTY - Dry baking yeast in the form of fermentable particles is coated or encapsulated to protect it from the effects of air.

USE - In ready-to-use flour or baking mixes especially for bread, the freshly obtained encapsulated yeast being mixed with the flour and other additives and then the product being air- and moisture-tight packaged.

ADVANTAGE - The encapsulated yeast can be used without the need for rehydration of the dough mixture and without the need for use of special packaging. It retains its activity for several months in air-tight packaging.

Dwg.0/0

L89 ANSWER 7 OF 78 WPIDS (C) 2002 THOMSON DERWENT  
 ACCESSION NUMBER: 2000-063839 [06] WPIDS  
 DOC. NO. CPI: C2000-017920  
 TITLE: Production of starch esters with low residual acid

content, useful for the preparation of compounds with defibrillated cellulose fillers.

DERWENT CLASS: A11  
 INVENTOR(S): KAKUSCHKE, R; RAPTHEL, I; RUNKEL, D; STOYE, H  
 PATENT ASSIGNEE(S): (BUNA) BUNA SOW LEUNA OLEFINVERBUND GMBH  
 COUNTRY COUNT: 82  
 PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
DE 19849187	C1	20000105	(200006)*		5
WO 2000024783	A1	20000504	(200030)	GE	
RW: AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE					
W: AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GD					
GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV					
MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT					
UA UG US UZ VN YU ZW					
AU 2000018554	A	20000515	(200039)		
EP 1127077	A1	20010829	(200150)	GE	
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT					
RO SE SI					
DE 19982166	T	20010927	(200156)		

## APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
DE 19849187	C1	DE 1998-19849187	19981026
WO 2000024783	A1	WO 1999-DE3218	19991006
AU 2000018554	A	AU 2000-18554	19991006
EP 1127077	A1	EP 1999-962029	19991006
		WO 1999-DE3218	19991006
DE 19982166	T	DE 1999-19982166	19991006
		WO 1999-DE3218	19991006

## FILING DETAILS:

PATENT NO	KIND	PATENT NO
AU 2000018554	A Based on	WO 200024783
EP 1127077	A1 Based on	WO 200024783
DE 19982166	T Based on	WO 200024783

PRIORITY APPLN. INFO: DE 1998-19849187 19981026

AB DE 19849187 C UPAB: 20000203

NOVELTY - Starch esters are produced by heating under pressure to give a high-viscosity reaction mixture containing 15-75% starch carboxylate ester with a degree of substitution (DS) of 0.5-2.95 in dissolved or partly dissolved and swollen, suspended form at 140-220 deg. C and 1.5-300 bar and then releasing the mixture into a space at 30-120 deg. C and 0.05-100 mbar.

USE - The starch esters are especially useful for the production of compounds with defibrillated, cellulose-containing fillers.

ADVANTAGE - A low-cost process for the production of starch esters with a low residual acid content, without the disadvantages of prior art processes (difficult work-up, reduced yields due to side reactions and decomposition, catalyst residues, long drying times and corrosion with vacuum drying methods etc.).

Dwg.0/0

L89 ANSWER 8 OF 78 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 3  
 ACCESSION NUMBER: 1999:723247 CAPLUS  
 DOCUMENT NUMBER: 131:338510  
 TITLE: Manufacture of paper liner for plasterboard  
 INVENTOR(S): Dawson, Ronley John  
 PATENT ASSIGNEE(S): Visy R & D Pty. Ltd., Australia  
 SOURCE: PCT Int. Appl., 21 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9957371	A1	19991111	WO 1999-AU324	19990504
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
TW 459084	B	20011011	TW 1999-88107166	19990503
AU 9935126	A1	19991123	AU 1999-35126	19990504
AU 740180	B2	20011101		
EP 1090184	A1	20010411	EP 1999-916717	19990504
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
JP 2002513873	T2	20020514	JP 2000-547313	19990504
PRIORITY APPLN. INFO.: AU 1998-3323 A 19980504				
AU 1998-6281 A 19981001				
WO 1999-AU324 W 19990504				
AB A title liner has a base paper with a surface size applied to 1 surface. The surface size includes oxidized starch, a sizing agent selected from alkenyl succinic anhydride, succinic anhydride, wood rosin, alkyl ketene dimer and their mixts., and an acrylic-contg. polymer. A coating including .gtoreq.1 inorg. filler and .gtoreq.1 binder is applied to the side of the paper having the external surface size. The surface size and coating are sufficiently porous to enable drying of the gypsum slurry used in manuf. of the plasterboard. The paper also provides a surface that can be printed with a decorative pattern and does not require painting or wall papering to provide and esthetically pleasing appearance.				
REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT				

L89 ANSWER 9 OF 78 CAPLUS COPYRIGHT 2002 ACS  
 ACCESSION NUMBER: 1999:194186 CAPLUS  
 DOCUMENT NUMBER: 130:239098  
 TITLE: Manufacture of stable, chlorine-free modified starch  
 INVENTOR(S): Ketola, Hannu; Hagberg, Peggy  
 PATENT ASSIGNEE(S): Raisio Chemicals Oy, Finland  
 SOURCE: PCT Int. Appl., 23 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1

## PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9912977	A1	19990318	WO 1998-FI684	19980902
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
FI 9703651	A	19990311	FI 1997-3651	19970910
CA 2302567	AA	19990318	CA 1998-2302567	19980902
AU 9890737	A1	19990329	AU 1998-90737	19980902
EP 1015497	A1	20000705	EP 1998-942702	19980902
R: AT, BE, CH, DE, DK, ES, FR, GB, IT, LI, NL, SE, PT, SI, FI				
PRIORITY APPLN. INFO.:			FI 1997-3651	A 19970910
			WO 1998-FI684	W 19980902

AB A title starch, useful as **binder** in **paper coating** pastes and for **surface** sizing of paper, is manufd. by degrading the starting material, e.g., potato starch by oxidn. with **H2O2** in the presence of Cu catalyst, and stabilizing the **oxidized starch** by acetylation combined with crosslinking. A typical title **starch** was manufd. by **oxidizing** potato **starch** with **H2O2** in aq. suspension at 40.degree. and pH 10 in the presence of 0.015% CuSO4, and acetylating with simultaneous crosslinking the product by reacting for 2 h at pH 8-9 with Ac2O contg. 0.15% adipic acid.

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L89 ANSWER 10 OF 78 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1999:70233 CAPLUS

DOCUMENT NUMBER: 130:140259

TITLE: Water-thinned emulsion **adhesives** having good water-resistant adhesion, storage stability, and high-speed coatability

INVENTOR(S): Nakamae, Masato; Fujiwara, Naoki

PATENT ASSIGNEE(S): Kuraray Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.  
CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 11021529	A2	19990126	JP 1997-173865	19970630

AB Title **adhesives** comprise dispersoids of copolymers obtained from .gtoreq.1 monomers selected from ethylenic unsatd. monomers and diene-type monomers and dispersants comprising modified poly(vinyl alcs.) having C.gtoeq.4 .alpha.-olefin units 1-20 mol% (A), starches (B), and saccharides (C), wherein 1-10,000 parts of B and 0-1000 parts of C per 100 parts of A. Thus, modified PVA (polymn. degree 1750, sapond. degree 98.9 mol%, ethylene content 5 mol%) 30, MS 3800 (**oxidized starch**) 20, and Trehaose (trehalose) 0.5 g were dissolved in 400 g water, 40 g vinyl acetate and **H2O2**/tartaric acid

catalyst were added to give a 50.4% poly(vinyl acetate) emulsion having viscosity 6500 mPas-s and good water-resistant adhesion, storage stability, and high-speed coatability.

L89 ANSWER 11 OF 78 WPIDS (C) 2002 THOMSON DERWENT  
 ACCESSION NUMBER: 1999-561816 [47] WPIDS  
 DOC. NO. NON-CPI: N1999-415145  
 DOC. NO. CPI: C1999-163749  
 TITLE: Absorbent structure based on raw materials having high degree of renewability.  
 DERWENT CLASS: A11 A14 A96 D17 D22 F07 P32 P34  
 INVENTOR(S): LAGERSTEDT EIDRUP, M; LAGERSTEDT, M; LAGERSTEDT, E M  
 PATENT ASSIGNEE(S): (SCAD) SCA HYGIENE PROD AB  
 COUNTRY COUNT: 85  
 PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 9947093	A1	19990923	(199947)*	EN	29
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL					
OA PT SD SE SL SZ UG ZW					
W: AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GD					
GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV					
MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT					
UA UG US UZ VN YU ZW					
SE 9800846	A	19990917	(199952)		
AU 9929659	A	19991011	(200008)		
EP 1069879	A1	20010124	(200107)	EN	
R: AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE					
SK 2000001186	A3	20010212	(200112)		
MX 2000007563	A1	20010201	(200168)		
JP 2002506714	W	20020305	(200220)		38

## APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 9947093	A1	WO 1999-SE284	19990301
SE 9800846	A	SE 1998-846	19980316
AU 9929659	A	AU 1999-29659	19990301
EP 1069879	A1	EP 1999-910898	19990301
		WO 1999-SE284	19990301
SK 2000001186	A3	WO 1999-SE284	19990301
		SK 2000-1186	19990301
MX 2000007563	A1	MX 2000-7563	20000802
JP 2002506714	W	WO 1999-SE284	19990301
		JP 2000-536335	19990301

## FILING DETAILS:

PATENT NO	KIND	PATENT NO
AU 9929659	A Based on	WO 9947093
EP 1069879	A1 Based on	WO 9947093
JP 2002506714	W Based on	WO 9947093

PRIORITY APPLN. INFO: SE 1998-846 19980316

AB WO 9947093 A UPAB: 19991116

NOVELTY - Absorbent structure based on raw materials having high degree of renewability includes a superabsorbent produced from hydrophilic monomers

by free radical copolymerization in presence of optionally chemically modified starch.

DETAILED DESCRIPTION - Absorbent structure contains a superabsorbent which has been produced from hydrophilic monomers by free radical copolymerization in the presence of optionally chemically modified starch. Use is made, during the production, of a free radical initiator which forms three or more radical sites per molecule and the superabsorbent structure includes hydrophilic and/or hydrophobic fibers which, together with a superabsorbent, impart hydrophilic character to the absorbent structure, and in the dry state, the superabsorbent constitutes 10-75% of the dry weight of the structure.

An INDEPENDENT CLAIM is also included for an absorbent product such as nappy, incontinence shield or a sanitary towel including an absorptive body comprising the absorptive structure as above enclosed by an enveloping material which is at least partially fluid-permeable.

USE - The absorbent structure is useful in absorbent products such as nappy, incontinence shield, and sanitary towel etc.

ADVANTAGE - The absorbent structure and the product are based on raw materials having a high degree of renewability and are derived from non-fossil raw materials. The absorbent structure and products do not need any special constructions.

Dwg.0/4

L89 ANSWER 12 OF 78 WPIDS (C) 2002 THOMSON DERWENT  
 ACCESSION NUMBER: 1999-430651 [36] WPIDS  
 DOC. NO. CPI: C1999-127021  
 TITLE: Impulse-dried paper with three-dimensional pattern, for use as toilet paper, kitchen roll, table napkins etc..  
 DERWENT CLASS: A11 A14 A18 A28 A97 F09  
 INVENTOR(S): HOLLMARK, H; LAMB, H; REINER, L; WALLENIIUS, H  
 PATENT ASSIGNEE(S): (SCAD) SCA HYGIENE PAPER AB; (SCAD) SCA HYGIENE PROD AB  
 COUNTRY COUNT: 82  
 PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 9936620	A1	19990722	(199936)*	EN	16
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SZ UG ZW					
W: AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GE GH GM HR HU ID IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG US UZ VN YU ZW					
SE 9704910	A	19990701	(199938)		
AU 9920830	A	19990802	(199954)		
DE 29824269	U1	20000914	(200053)		

#### APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 9936620	A1	WO 1998-SE2458	19981229
SE 9704910	A	SE 1997-4910	19971230
AU 9920830	A	AU 1999-20830	19981229
DE 29824269	U1	DE 1998-29824269	19981229
		Application no. WO 1998-SE2458	19981229

#### FILING DETAILS:

PATENT NO	KIND	PATENT NO



-----  
 AU 9920830      A    Based on                      WO 9936620

PRIORITY APPLN. INFO: SE 1997-4910                      19971230

AB    WO    9936620 A UPAB: 19990908

NOVELTY - The use of additives which undergo chemical reaction in connection with impulse drying, thus contributing to stabilizing of pattern structure.

DETAILED DESCRIPTION - Impulse-dried paper, having three-dimensional pattern of alternating raised and recessed portions, conveyed to paper during impulse-drying process, contains at least 0.05 wt.%, preferably at least 0.25 wt.% (calculated per dry fiber wt.) of one or more additives undergoing chemical reaction (preferably acetylation, silylation and/or crosslinking with bi- or multifunctional groups, such as diisocyanates and triazine derivatives) in connection with impulse drying, in result of which they contribute to stabilizing of pattern structure produced on paper during impulse drying stage. The additive is preferably reactive polymer, such as wet strength agent, fixing agent, polysaccharide, polyvinyl alcohol, or polyacid, such as polyacrylic acid and its copolymers; or hydrophobizing agent, e.g. resin, fatty acid, **alkyl ketene dimer** or alkyl succinic acid preparation; or inorganic pigment or complex former which can react with specific groups in lignin and cellulose and form three-dimensional networks. The additive may either be bonded to the fiber surface or be added as separate addition either to the fiber furnish or to the moist paper web before the impulse drying.

USE - In production of soft absorbent paper with three-dimensional pattern, for use e.g. as toilet paper, kitchen roll, table napkin, paper handkerchief etc.

ADVANTAGE - The paper maintains its pattern structure also in wet conditions, which greatly improves its absorbing properties.

DESCRIPTION OF DRAWING(S) - The drawing shows schematic view of impulse drying device.

wet paper web 10  
 compressible press felt 11  
 press nip 12  
 heated roll 13  
 pressing roll 14  
 wind-up roll 16  
 Dwg.1/7

L89 ANSWER 13 OF 78    WPIDS (C) 2002 THOMSON DERWENT  
 ACCESSION NUMBER:    2000-348753 [30]    WPIDS  
 DOC. NO. CPI:            C2000-105952  
 TITLE:                    Water-soluble adhesive for food industry.  
 DERWENT CLASS:           D13 G03  
 INVENTOR(S):            MATUKHIN, E L; VALISHINA, Z T; YARULLIN, R N  
 PATENT ASSIGNEE(S):    (MATU-I) MATUKHIN E L; (VALI-I) VALISHINA Z T; (YARU-I) YARULLIN R N  
 COUNTRY COUNT:           1  
 PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
RU 2133763	C1	19990727	(200030)*		

#### APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE

RU 2133763 C1

RU 1997-100341 19970113

PRIORITY APPLN. INFO: RU 1997-100341 19970113

AB RU 2133763 C UPAB: 20000624

NOVELTY - In order to prepare adhesive, use is made of casein solution containing active **additives** having weight concentration within 28-31.4% with alkaline solution of **oxidized starch**.

Ratio of weight parts of said components is 5:1. Adhesive composition has higher frost resistance and withstands at least four cycles of freezing and thawing.

USE - **Food** industry, more particularly gluing of carbon boxes with varnish-painted surfaces for packing quickly frozen products.

ADVANTAGE - Improved properties of the adhesive.

Dwg.0/0

L89 ANSWER 14 OF 78 WPIDS (C) 2002 THOMSON DERWENT

ACCESSION NUMBER: 1999-573816 [49] WPIDS

DOC. NO. CPI: C1999-167543

TITLE: An environmentally-friendly aqueous architectural coating composition containing modified starch.

DERWENT CLASS: A11 A82 G02

INVENTOR(S): HORLEY, S; WHEELER, S A; HORLEY, S M

PATENT ASSIGNEE(S): (ICIL) IMPERIAL CHEM IND PLC

COUNTRY COUNT: 85

PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
EP 949307	A1	19991013 (199949)*	EN	12	
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI					
WO 9952985	A1	19991021 (199952)	EN		
RW: EA GH GM KE LS MW OA SD SL SZ UG ZW					
W: AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG US UZ VN YU ZA ZW					
AU 9931481	A	19991101 (200013)			
BR 9909475	A	20001219 (200103)			
EP 949307	B1	20011010 (200167)	EN		
R: AT BE CH DE DK ES FI FR GB GR IE IT LI NL PT SE					
DE 69900338	E	20011115 (200176)			
US 6384132	B1	20020507 (200235)			

## APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
EP 949307	A1	EP 1999-106611	19990331
WO 9952985	A1	WO 1999-EP2185	19990331
AU 9931481	A	AU 1999-31481	19990331
BR 9909475	A	BR 1999-9475	19990331
		WO 1999-EP2185	19990331
EP 949307	B1	EP 1999-106611	19990331
DE 69900338	E	DE 1999-600338	19990331
		EP 1999-106611	19990331
US 6384132	B1	US 1999-286312	19990405

## FILING DETAILS:

PATENT NO	KIND		PATENT NO
AU 9931481	A	Based on	WO 9952985
BR 9909475	A	Based on	WO 9952985
DE 69900338	E	Based on	EP 949307

PRIORITY APPLN. INFO: GB 1998-7426 19980408

AB EP 949307 A UPAB: 19991124

NOVELTY - An environmentally-friendly aqueous architectural coating composition which includes film-forming binder polymer composed of modified starch chemically associated with chains of copolymerized monomers, at least 93 wt.% of which are selected from mono-ethylenically unsaturated monomers.

DETAILED DESCRIPTION - An environmentally-friendly aqueous architectural coating composition which includes film-forming binder polymer composed of modified starch chemically associated with chains of copolymerized monomers, at least 93 wt.% of which are selected from mono-ethylenically unsaturated monomers, where:

- a) the starch has been modified by the introduction of carboxylic acid or groups optionally converted to an inorganic salt,
- b) up to 50 wt.% of the starch-containing binder polymer is provided by the modified starch and
- c) not more than 7 mol.% of the copolymerized mono-ethylenically unsaturated monomers are derived from carboxylic acid monomers.

An INDEPENDENT CLAIM is also included for a process for making the described coating composition by:

- a) modifying a **starch** by lightly **oxidizing** it to introduce carboxylic acid groups optionally converted to an inorganic salt,
- b) adding free radical initiator to an aqueous dispersion of the modified starch and feeding the unsaturated monomers into the dispersion,
- c) subjecting the dispersion to a temperature which causes polymerization of the monomers to produce chains of copolymerized monomers chemically associated with the modified starch, in turn creating the starch-containing film-forming binder,
- d) mixing this binder with other components of the composition,
- e) choosing the ratio of modified starch to unsaturated monomers so as to ensure that the weight of starch in the starch-containing binder does not exceed 50 wt.% of the weight of the starch-containing binder and choosing a ratio of monomers such that not more than 7 mol.% of the copolymerized monomers are derived from carboxylic acid monomers.

USE - This is for eg. water-resistant paints, varnishes or woodstains suitable for use at ambient temperature.

ADVANTAGE - Dependency on materials obtained from non-renewable resources such as petrochemicals is reduced. Smaller amounts of expensive co-monomers are needed. The coatings are water-resistant and can have thixotropic properties. They can be applied with a brush or pad.

Dwg.0/0

L89 ANSWER 15 OF 78 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1999:555855 CAPLUS

DOCUMENT NUMBER: 132:167288

TITLE: Preparation and application of a quick - drying modified starch adhesive

AUTHOR(S): Chen, Chun-Xin; Yuan, Yi-Hua; Lai, Xing-Hua; Luo, Chun-Qiu

CORPORATE SOURCE: Department of Chemistry and Chemical Engineering  
Foshan University, Foshan, 528000, Peop. Rep. China

SOURCE: Huaxue Yu Nianhe (1999), (3), 135-137

CODEN: HYZHEN; ISSN: 1001-0017  
PUBLISHER: Huaxue Yu Nianhe Bianji Weiyuanhui  
DOCUMENT TYPE: Journal  
LANGUAGE: Chinese

AB A new adhesive which is more suitable for corrugated cardboard manuf. was developed by using **tapioca starch** as the reactant. **H2O2** as oxidant, NaOH as pasting agent, and by adding urea-formaldehyde resin and China clay as additives to improve properties. The new adhesive had good adhesion force and good appearance.

L89 ANSWER 16 OF 78 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2001:220457 CAPLUS

DOCUMENT NUMBER: 134:224217

TITLE: Process and installation for producing coated writing-printing paper

INVENTOR(S): Avram, Natalia; Pavaleanu, Ticu; Bordea, Ion; Traistaru, Teodor; Mohorea, Penelopa; Munteanu, Carmen

PATENT ASSIGNEE(S): SC Celhart Donaris SA, Braila, Rom.

SOURCE: Rom., 8 pp.  
CODEN: RUXXA3

DOCUMENT TYPE: Patent

LANGUAGE: Romanian

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
RO 113577	B3	19980828	RO 1997-1273	19970709

AB The paper is fabricated by mixing bleached sulfate pulp (from resinous and foliacea woods) with 20-25% CaCO3 filler, 0.5-0.8% cationic starch, and 0.005-0.006% whitener; a neutral or cationic **alkyl-ketene dimer** is added to enhance the bending strength and a cationic polyacrylamide is added as retention agent. The pulp is processed into paper sheets which are then surface-treated with a soln. contg. 2.5-4% [of total fiber] **oxidized starch** and 0.5-0.8% opacity control agent. The installation for paper manuf. comprises an integrated mixing and press train, including storage bins, hoppers, dispensing valves, pumps, and process water network.

L89 ANSWER 17 OF 78 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1997:629470 CAPLUS

DOCUMENT NUMBER: 127:249594

TITLE: Method for improving the surface properties of paper and cardboard by treatment with a mixture containing a **binder** and inorganic and organic pigment

INVENTOR(S): Hamunen, Antti; Teirfolk, Jan-Erik; Lindholm, Joergen; Paavola, Virpi

PATENT ASSIGNEE(S): Raisio Chemicals Oy, Finland

SOURCE: Finn., 22 pp.  
CODEN: FIXXAP

DOCUMENT TYPE: Patent

LANGUAGE: Finnish

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FI 98943	B	19970530	FI 1996-125	19960110
FI 98943	C	19970910		
EP 784119	A1	19970716	EP 1997-660001	19970103

R: AT, BE, DE, FR, GB, IT, NL, SE  
CA 2194803 AA 19970711 CA 1997-2194803 19970110  
PRIORITY APPLN. INFO.: FI 1996-125 19960110  
AB The org. pigment is an aq.-phase polymn. product of polymerizable monomers and modified starch, having glass transition temp. .gtoreq.50.degree..  
The method improves the printability, appearance, and fiber pull-out resistance of the paper and cardboard. To water of 70.degree. 470 were added enzyme AA-20 (.alpha.-amylase) 0.23 and Raisamyl 302 (NaOCl-oxidized potato starch) 197.4 g. The soln. was mixed with CuSO4 0.06 and Aerosol DPOS-45 (anionic alkylbenzenesulfonate-type surfactant) 7.94 g. Under flowing N, the mixt. was mixed with aq. H2O2 (3.91 g 30% H2O2 in 31 mL water) and styrene. After cooling the org. pigment dispersion obtained had solids content 45.6 wt.%, pH 4.2, room-temp. viscosity 106 mPa.s, and particle size 215 nm.

L89 ANSWER 18 OF 78 CAPLUS COPYRIGHT 2002 ACS  
ACCESSION NUMBER: 1998:125820 CAPLUS  
DOCUMENT NUMBER: 128:155757  
TITLE: Effect of oxidizing agents on quality of corn starch adhesive  
AUTHOR(S): Zhai, Guangyu  
CORPORATE SOURCE: The Medical School Affiliated to Henan Medical University, Zhengzhou, 450052, Peop. Rep. China  
SOURCE: Huaxue Yu Nianhe (1997), (4), 237-239  
CODEN: HYZHEN; ISSN: 1001-0017  
PUBLISHER: Huaxue Yu Nianhe Bianjibu  
DOCUMENT TYPE: Journal  
LANGUAGE: Chinese  
AB Effects of pH, temp., and catalyst on oxidn. of corn starch with KMnO4, H2O2, and NaClO and the storage life of the corn starch adhesive were studied. The oxidizing ability of the oxidizing agents was enhanced with increasing temp. for all the 3 oxidizing agents, and with decreasing pH for KMnO4 and H2O2, but with increasing pH for NaClO. The storage stability was the best when H2O2 was used.

L89 ANSWER 19 OF 78 CAPLUS COPYRIGHT 2002 ACS  
ACCESSION NUMBER: 1998:91714 CAPLUS  
DOCUMENT NUMBER: 128:129397  
TITLE: Development of maize starch adhesive  
AUTHOR(S): Huang, Dengye; Gu, Qisheng; Huang, Xianzhang; Ma, Huixuan  
CORPORATE SOURCE: Department of Life Science, Shanxi University, Taiyuan, 030006, Peop. Rep. China  
SOURCE: Huaxue Yu Nianhe (1997), (3), 174-177  
CODEN: HYZHEN; ISSN: 1001-0017  
PUBLISHER: Huaxue Yu Nianhe Bianjibu  
DOCUMENT TYPE: Journal  
LANGUAGE: Chinese  
AB A process for manuf. of maize starch adhesive by oxidn. with H2O2 in the presence of catalyst FeSO4 was presented.

L89 ANSWER 20 OF 78 CAPLUS COPYRIGHT 2002 ACS  
ACCESSION NUMBER: 1997:150883 CAPLUS  
DOCUMENT NUMBER: 126:158944  
TITLE: Antibacterial paper containing cationic microbicides immobilized on carboxymethylcellulose  
INVENTOR(S): Kabasawa, Eriko; Oosawa, Junji  
PATENT ASSIGNEE(S): Shinoji Seishi Kk, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 08325103	A2	19961210	JP 1995-128634	19950526

AB Paper is manufd. using sizes for neutral papermaking. Thus, a mixt. of Kiccolate CMC-BE (CMC benzalkonium salt) 3.8, softwood bleached kraft pulp 20.0, and hardwood bleached kraft pulp 76.2% was mixed with antifoaming agent, Sizepine K 901 (alkyl ketene dimer) 0.25, an adhesive 0.5, and a strengthening agent 1.0%, made into paper, and size-pressed with **oxidized starch** to prep. paper with good printability and antibacterial effect.

L89 ANSWER 21 OF 78 WPIDS (C) 2002 THOMSON DERWENT  
 ACCESSION NUMBER: 1997-098570 [09] WPIDS  
 DOC. NO. CPI: C1997-031377  
 TITLE: Prodn. of **oxidised** dextrin-contg. **starch**, used e.g. in prodn. of cardboard - by processing with urea, and mixing with aq. soln. of **hydrogen peroxide**.  
 DERWENT CLASS: A11 D17 F09  
 INVENTOR(S): KOZLOVA, N YA; ZHZUKOVSKII, V N  
 PATENT ASSIGNEE(S): (KOZL-I) KOZLOVA N YA  
 COUNTRY COUNT: 1  
 PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
RU 2061701	C1	19960610	(199709)*		6

## APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
RU 2061701	C1	SU 1992-5057648	19920804

PRIORITY APPLN. INFO: SU 1992-5057648 19920804

AB RU 2061701 C UPAB: 19970228  
 Starch is preliminary processed with urea in an amount of 1-16 % w.r.t. mass of starch at 80-90deg.C for 4-5 hour, and obtd. prod. is mixed with aq. soln. of **hydrogen peroxide** at 60-70deg.C for 1-2 hour with content of **hydrogen peroxide** in mixt. equal to 0.35-1.0 % w.r.t. mass of starch. Urea reacts with residuals of glucose in starch and forms the usual reaction prods. of carbonyl cpds. and amines, and intermediaries further react with molecules of starch which improves holding of starch on the surface of cardboard. In examples potato and maize starch are used. The mass fraction of nitrogen is 0.41-7.12 %, PH of soln. is 6.7-7.1, viscosity of 0.5% soln. is 1.8-6.0 Pa.s, and prod. output is 89-98 %. Tests are carried out with two types of starch: common potato **starch**, and **oxidised** modified **starch**.  
 Prepn. of **adhesive** emulsions are obtd. without difficulties.  
 Average value of resistance to laminar separation is increased from 125 N without interlaminar impregnation to 150 N with interlaminar impregnation.  
 USE - In methods of prodn. of **oxidised starch**

which can be used as binder in prodn. of cardboard with whiting, impregnation in mass and on surface, for increased interlaminar strength of cardboard.

ADVANTAGE - Simplified process of obtaining of **oxidised starch**, and also yields starch with reduced viscosity, for improved strength properties of cardboard. The resistance to sepn. in layers is increased by 20% w.r.t. common starch.

Dwg.0/0

L89 ANSWER 22 OF 78 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 4  
ACCESSION NUMBER: 1995:607912 CAPLUS  
DOCUMENT NUMBER: 123:86406  
TITLE: Process for incorporation of a calcium carbonate filler, enhancing sizing efficiency in filled papers and method for making paper  
INVENTOR(S): Kurrle, Frederick L.  
PATENT ASSIGNEE(S): Westvaco Corp., USA  
SOURCE: U.S., 7 pp.  
CODEN: USXXAM  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5411639	A	19950502	US 1993-136265	19931015
US 5514212	A	19960507	US 1994-343717	19941122

PRIORITY APPLN. INFO.: US 1993-136265 19931015

AB A process for incorporation of a CaCO<sub>3</sub> filler into a fibrous material, e.g. cellulose fibers, comprises reacting an aq. slurry of the filler with 1.5-30.0 parts of a starch-soap complex/100 parts filler, wherein the **starch** is **oxidized** or nonmodified, either before or after introduction of the filler, into a furnish of the fibrous material to ppt. the complex on the surfaces of the filler. Cooked corn starch was heated with a soap and metered into a CaCO<sub>3</sub> slurry to produce a surface treated pigment. The surface treated pigment (1.50 starch/100 parts CaCO<sub>3</sub>) was incorporated into a bleached kraft fiber contg. other additives including **alkyl ketene dimer** to give an initial Hercules size test 225 s and 106 s after 4 wk, compared to 41 and 15, resp., for CaCO<sub>3</sub> not surface treated. The use of the surface treated pigment also allows the papermaker to increase the filler content of the paper without sacrificing dry strength properties.

L89 ANSWER 23 OF 78 CAPLUS COPYRIGHT 2002 ACS  
ACCESSION NUMBER: 1996:71419 CAPLUS  
DOCUMENT NUMBER: 124:149111  
TITLE: Use of zirconium salts to improve surface sizing efficiency in paper making  
INVENTOR(S): Pandian, Vernon E.; Calcar, Dan V.; Wolff, Bernard W.  
PATENT ASSIGNEE(S): Hopton Technologies, Inc., USA  
SOURCE: U.S., 11 pp. Cont.-in-part of U.S. 5,362,573.  
CODEN: USXXAM  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 2  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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US 5472485 A 19951205 US 1994-286505 19940805  
 US 5362573 A 19941108 US 1993-11488 19930128  
 WO 9609345 A1 19960328 WO 1995-US10283 19950807  
 W: AU, BR, CA, FI, JP, KR, NO, NZ  
 RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE  
 AU 9532440 A1 19960409 AU 1995-32440 19950807

PRIORITY APPLN. INFO.:

US 1993-11488 19930128  
 US 1994-308574 19940919  
 WO 1995-US10283 19950807

AB New sizing compns. contg. (a) a compd. selected from alkenylsuccinic anhydrides, alkylketene dimers and their mixts. and (b) a metal salt selected Zr, Hf, Ti and their mixts. are described. The use of the above compns. during paper making prevents the surface size polymer from penetrating into the paper and paperboard before it is dried and cured, thereby sealing their surface and provides paper products having superior liq. storage properties, esp. for liq. **foods**, e.g. milk, juices, etc. For example, an aq. emulsion of 166.8 lb alkylketene dimer in a dispersion of 333.6 (dry basis) **oxidized cationic starch** in 200 gal H<sub>2</sub>O contg. 20 lb ammonium zirconium carbonate (AZCote5800 m) (I) when applied at 3.0 lb/ton of paper furnish together with 6.7 dry lb/ton of a quaternary **cationic potato starch** (retention aid) in a 144 lbs/3000 ft<sup>2</sup> sheet gave H<sub>2</sub>O<sub>2</sub> absorption of 0.5 kg/m<sup>2</sup> in a test on paper for liq. packaging, vs. 0.71 for paper surface-sized with a similar compn. without I.

L89 ANSWER 24 OF 78 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1995:797614 CAPLUS

DOCUMENT NUMBER: 123:202653

TITLE: Thermochemically modified starch **binders** for **coatings** on printing **paper** with enhanced brightness

INVENTOR(S): Suzuki, Kunio; Ishama, Takeyuki

PATENT ASSIGNEE(S): Mitsubishi Paper Mills Ltd, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 07189189	A2	19950725	JP 1993-335523	19931228

AB The colorless starch **binders** are obtained by thermochem. modifying an acetylated starch (preferably having substitution degree 0.03-0.1 and of tapioca origin) with persulfate oxidants, then bleaching the resulting fluidizable product with 0.2-2.0% H<sub>2</sub>O<sub>2</sub> in the presence of 0.2-2.0% NaOH.

L89 ANSWER 25 OF 78 WPIDS (C) 2002 THOMSON DERWENT

ACCESSION NUMBER: 1997-204171 [19] WPIDS

DOC. NO. CPI: C1997-065674

TITLE: Instant-drying composite gum made from starch.

DERWENT CLASS: A11 A81 E11 G03

INVENTOR(S): CHEN, B; WEN, T

PATENT ASSIGNEE(S): (WENT-I) WEN T

COUNTRY COUNT: 1

PATENT INFORMATION:



PATENT NO	KIND	DATE	WEEK	LA	PG
CN 1097449	A	19950118	(199719)*		3

## APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
CN 1097449	A	CN 1993-111491	19930710

PRIORITY APPLN. INFO: CN 1993-111491 19930710

AB CN 1097449 A UPAB: 19970512

The composite starch **adhesive** for pasting corrugated paperboard is prepared, with starch gum, compound binder and tributyl phosphate, by stirring, heating, **oxidising** and compounding. The **starch** gum contains starch, sodium hydroxide, **hydrogen peroxide**, borax and water. The compound binder is prepd. by heating a mixture of polyvinyl alcohol, formaldehyde, hydrochloric acid and water. The composite starch **adhesive** shows a drying speed 3 times faster than that of conventional types, low cost and less consumption.

Dwg.0

L89 ANSWER 26 OF 78 WPIDS (C) 2002 THOMSON DERWENT

ACCESSION NUMBER: 1997-203992 [19] WPIDS

DOC. NO. CPI: C1997-065539

TITLE: Quick making high-grade maize **adhesive** at normal atmospheric temp..

DERWENT CLASS: A81 G03

INVENTOR(S): CHEN, W

PATENT ASSIGNEE(S): (CHEN-I) CHEN W

COUNTRY COUNT: 1

PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
CN 1097206	A	19950111	(199719)*		

## APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
CN 1097206	A	CN 1993-111494	19930708

PRIORITY APPLN. INFO: CN 1993-111494 19930708

AB CN 1097206 A UPAB: 19970512

The invention provides a method for quick preparing high-quality maize **adhesive** at ordinary temp.. The method uses the function of that potassium permanganate and **hydrogen peroxide** can react in dilute sulphuric acid and quickly release oxygen to make the maize starch oxidate and make it into **oxidised starch** with a certain oxidation depth, and then the **oxidised starch** is quickly dextrinated in an alkali liquor whose concentration is higher and then is diluted by adding water, and then other ingredients of cross-linking agent, etc. are added, so that the invented product can be made up. It is characterized by that it uses general warm water to make preparation, so it is simple in preparation and equipment and easy in operation.

Dwg.0

L89 ANSWER 27 OF 78 CAPLUS COPYRIGHT 2002 ACS  
 ACCESSION NUMBER: 1995:306809 CAPLUS  
 DOCUMENT NUMBER: 122:79422  
 TITLE: Oxidation of potato starch by hydrogen peroxide  
 AUTHOR(S): Parovuori, Petteri; Hamunen, Antti; Forssell, Pirkko;  
 Autio, Karin; Poutanen, Kaisa  
 CORPORATE SOURCE: VTT Biotechnol. Food Res., Antti Hamunen, 02044,  
 Finland  
 SOURCE: Starch/Staerke (1995), 47(1), 19-23  
 CODEN: STARDD; ISSN: 0038-9056  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

AB Potato starch was oxidized by hydrogen peroxide in alk. and acidic reaction conditions with copper, iron and tungstate catalysts in order to introduce carboxyl and carbonyl groups in the starch mol. Carbonyl contents up to 6.6 per 100 glucose units could be obtained, whereas carboxyl content remained low (up to 1.4). Starch yields in the alk. and acidic reactions were 90 and 99%, resp. The mol. wt. decreased markedly with the degree of oxidn., and was dependent on the catalyst used. Rheol. measurements revealed that when the mol. wt. of the moderately oxidized starch was high, a very firm gel ( $G' = 40\text{kPa}$ ) was obtained with 25% starch concn. When the degree of oxidn. increased, the storage modulus  $G'$  decreased. The more oxidized starch contained carbonyl groups, the higher was the gelatinization temp.

L89 ANSWER 28 OF 78 WPIDS (C) 2002 THOMSON DERWENT  
 ACCESSION NUMBER: 1994-259513 [32] WPIDS  
 DOC. NO. CPI: C1994-118200  
 TITLE: Substitute for lipid for dressings or desserts - consists of oxidised starch of e.g. tapioca, potato, corn etc.  
 DERWENT CLASS: D13  
 PATENT ASSIGNEE(S): (SIKI) SHIKISHIMA STARCH KK; (SHOS) SHOWA SANGYO CO  
 COUNTRY COUNT: 1  
 PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
JP 06189699	A	19940712	(199432)*		14

## APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
JP 06189699	A	JP 1992-361937	19921225

PRIORITY APPLN. INFO: JP 1992-361937 19921225

AB JP 06189699 A UPAB: 19940928  
 Substitute comprises an oxidised starch eg tapioca starch, potato starch, corn starch, and waxy corn starch, in which the starch is oxidised by an oxidiser.  
 USE - Used for making dressings or frozen desserts.  
 Dwg.0/0

L89 ANSWER 29 OF 78 WPIDS (C) 2002 THOMSON DERWENT  
 ACCESSION NUMBER: 1994-077674 [10] WPIDS

DOC. NO. NON-CPI: N1994-060608  
 DOC. NO. CPI: C1994-035426  
 TITLE: Transfer paper for electrophotography with easy multiple withdrawal from stack - contains calcium carbonate filler, **alkyl ketene dimer**, and a poly acrylamide contg. cyclic secondary amine functional gp.  
 DERWENT CLASS: A89 E17 F09 G08 P84 S06  
 PATENT ASSIGNEE(S): (MITY) MITSUBISHI PAPER MILLS LTD  
 COUNTRY COUNT: 1  
 PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
JP 06027712	A	19940204	(199410)*		5

## APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
JP 06027712	A	JP 1992-182576	19920709

PRIORITY APPLN. INFO: JP 1992-182576 19920709

AB JP 06027712 A UPAB: 19940421

The paper comprises CaCO<sub>3</sub> as filler, **alkyl ketene dimer** of 0.05-0.10% and polyacrylamide contg. cyclic secondary amine as the functional gp. 0.03-0.1% (w.r.t. pulp).

The deviation coefft. of the paper withdrawing power, withdrawing one paper from the piled-up paper, is within 2.8%.

USE/ADVANTAGE - Prevents trouble of withdrawing multiple paper from the piled up paper at the same time in an electrophotographic copier.

In an example, the slurry: LBKP+NBKP(7:3) 100 parts, CaCO<sub>3</sub> 7 parts, **alkylketene dimer** 0.05 parts, cationic starch 0.7 parts, polyacrylamide contg. the cyclic secondary amine 0.1 parts. The paper is made by using the slurry in the paper machine. The **oxidised starch** of 1.2 g/m<sup>2</sup> is coated on the paper.

Dwg.0/0

L89 ANSWER 30 OF 78 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1994:247698 CAPLUS

DOCUMENT NUMBER: 120:247698

TITLE: Technological evaluation of nitrogen-containing starch **derivatives** as sizing agents

AUTHOR(S): Hebeish, A.; Ragheb, A. A.; Refai, R.; Saad, M. A.; Abd El-Thalouth, I.

CORPORATE SOURCE: Text. Res. Div., Natl. Res. Cent., Cairo, Egypt

SOURCE: Starch/Staerke (1994), 46(3), 109-13

CODEN: STARDD; ISSN: 0038-9056

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The structural changes caused by introducing different N-contg. groups via cyanoethylation, carbamoylethylation, and carbamation in the mols. of rice and maize starches before and after oxidn. and the effects of these changes on the tech. properties of yarns sized with such starch products were studied. The apparent viscosity of pastes prepd. from the **modified** products depended on the nature of the starch, the degree of oxidn. prior to chem. **modification**, and the nature of the **modification**, as well as the test conditions, i.e. the rate of shear and temp. Cotton yarns sized with these starch **derivs**.

were measured for yarn no., tensile strength, C.V.%, elongation at break, and C.V.% in elongation. In addn., the weavability test, the min. no. of cycles due to abrasion (St1), av. no. of cycles due to abrasion (St6) and cyclical elongation % were measured. A comparison among **modified** starches prepd. from rice starch revealed that the highest value of St1 was obtained with yarns sized using a carbamoylethylated starch prepd. from unoxidized starch. In the case of maize starch, the highest value of St1 was obtained with cotton yarns sized using carbamoylethylated **starch derived from starch oxidized** by 1 g/L active Cl.

L89 ANSWER 31 OF 78 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1996:515220 CAPLUS

DOCUMENT NUMBER: 125:250809

TITLE: Good-quality **oxidized starch adhesive**

AUTHOR(S): Yue, Shide; Tang, Daolin; Gai, Yi; Lei, Wenbo

CORPORATE SOURCE: Chongking Chem. Staff Workers Coll., Chungking, Peop. Rep. China

SOURCE: Zhanjie (1994), 15(6), 24-27  
CODEN: ZHANET; ISSN: 1001-5922

DOCUMENT TYPE: Journal

LANGUAGE: Chinese

AB **Oxidized starch adhesive** was prepd. in the presence of **H2O2**, YT-II composite **catalyst**, and other additives. Factors affecting properties of the **adhesive** including types of starch, **catalyst**, oxidn. agent, reaction temp., and reaction time were studied by orthogonal exptl. design. Optimal formulation and prepn. conditions were given.

L89 ANSWER 32 OF 78 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1995:708330 CAPLUS

DOCUMENT NUMBER: 123:86394

TITLE: Manufacture of fluid food product packaging board  
INVENTOR(S): Makushina, Alla V.; Murzina, Galina A.; Kramar, Olga P.; Ostrovskaya, Ulyana L.; Rybalko, Lyubov P.; Magij, Mikhail Yu.; Brezhneva, Raisa T.; Mekhedov, Aleksej G.; Leontev, Anatolij I.; Et, Al.

PATENT ASSIGNEE(S): Ukrainskij Nauchno-Issledovatel'skij Institut  
Tsellyulozno-Bumazhnoj Promyshlennosti, USSR;  
Proizvodstvennoe Ob'edinenie "Skytyvkar'skij  
Lesopromyshlennyj Kompleks" im. Leninsk

SOURCE: U.S.S.R. From: Izobreteniya 1993, (13), 47.  
CODEN: URXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Russian

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
SU 1807147	A1	19930407	SU 1991-4934549	19910508

AB The surface strength of base paperboard is increased while decreasing the consumption of sizing substances by using an internal size based on **dimers of alkyl ketenes** and polyaminoepichlorohydrin and a surface size of **oxidized starch**.

L89 ANSWER 33 OF 78 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1994:79376 CAPLUS

DOCUMENT NUMBER: 120:79376  
 TITLE: **Sizing** agents for warp **yarns** for high-speed looms  
 INVENTOR(S): Aoki, Takaaki; Nishida, Yoshitaka; Tanaka, Susumu; Yamada, Tetsuo  
 PATENT ASSIGNEE(S): Honen Corp, Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 05186970	A2	19930727	JP 1991-359574	19911231

AB The title sizes comprise starch having min. viscosity (.eta.; concn. 10%, at 92.5.degree.) 100-1000 BU and starch having .eta. .ltoreq.50 BU. Cotton warp yarns sized with a compn. contg. 50 parts 3:7 mixt. of starch with .eta. 160 BU and .alpha.-**modified** starch with .eta. 40 BU and 30 parts poly(vinyl alc.) exhibited good size adhesion to the yarn.

L89 ANSWER 34 OF 78 CAPLUS COPYRIGHT 2002 ACS  
 ACCESSION NUMBER: 1995:494374 CAPLUS  
 DOCUMENT NUMBER: 123:86468  
 TITLE: Quick cold oxidation of starch and manufacture of **adhesives** therewith  
 INVENTOR(S): Jiang, Xueyi  
 PATENT ASSIGNEE(S): Peop. Rep. China  
 SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 8 pp.  
 CODEN: CNXXEV  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Chinese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 1077458	A	19931020	CN 1992-102818	19920414

AB A process includes suspending 40-55% starch in water, gelatinizing with a 6-15% NaOH soln., and oxidizing with (NH4)2S2O8 or FeSO4 as the initiator and H2O2 or NaOCl as the oxidizing agent under light. Thus, an **adhesive** for corrugated paperboard was prepd. from starch 100, NaOH 14, (NH4)2S2O8 4, H2O2 1, borax 5, and water 600 parts.

L89 ANSWER 35 OF 78 WPIDS (C) 2002 THOMSON DERWENT  
 ACCESSION NUMBER: 1993-340295 [43] WPIDS  
 DOC. NO. CPI: C1993-151226  
 TITLE: Neutral paper having good ink fixing property - is obtd. by applying styrene -acrylic acid copolymer to neutral paper contg. calcium carbonate filler and **alkyl ketene dimer** as internal sizing agent.  
 DERWENT CLASS: A82 F09 G02  
 PATENT ASSIGNEE(S): (MITY) MITSUBISHI PAPER MILLS LTD  
 COUNTRY COUNT: 1  
 PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
JP 05247888	A	19930924	(199343)*		3

## APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
JP 05247888	A	JP 1992-51932	19920310

PRIORITY APPLN. INFO: JP 1992-51932 19920310

AB JP 05247888 A UPAB: 19931207

Neutral paper is obtd. by applying a surface sizing agent consisting mainly of styreneacrylic acid copolymer to the surface of neutral paper contg. CaCO<sub>3</sub> as a filler and **alkyl ketene**

**dimer** or alkenyl succinic anhydride as internal sizing agent.

In an example, pptd. CaCO<sub>3</sub> (7 pts.), **alkyl ketene dimer** (0.1 pt.) and amphoteric starch (0.8 pt.) were added to a mixt. of hardwood BKP (70 pts., 380 CSF) and softwood BKP (30 pts., 450 ml CSF), and the mixt. was hand made into a sheet (basis wt. 64 g/m<sup>2</sup>). The sheet was coated with a mixt. of styrene-acrylic acid copolymer and **oxidised starch** in amt. such that the former is 0.01 g/m<sup>2</sup> and the latter is 1.7 g/m<sup>2</sup>. The obtd. neutral paper has good ink fixing property. On the other hand, handmade sheet not coated with the surface sizing agent had poor ink fixing property.

Dwg. 0/0

L89 ANSWER 36 OF 78 WPIDS (C) 2002 THOMSON DERWENT

ACCESSION NUMBER: 1993-305287 [39] WPIDS

DOC. NO. CPI: C1993-135815

TITLE: **Cationic** starch oxidn. to give **amphoteric** starch carrying carboxylic gps. - comprises selective oxidn. of terminal reducing gps. using **hydrogen peroxide** and hydrobromic acid or bromine, used in paper mfr..

DERWENT CLASS: A11 A97 F09

INVENTOR(S): DEFAYE, J; GADELLE, A; KERVENNAL, J; SUC, S

PATENT ASSIGNEE(S): (AQOR) ELF ATOCHEM SA; (SUCS-I) SUC S

COUNTRY COUNT: 20

PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
EP 562927	A1	19930929	(199339)*	FR	10
R: AT BE CH DE DK ES FR GB IT LI NL PT SE					
AU 9335352	A	19930930	(199347)		
FR 2688787	A1	19930924	(199347)		20
NO 9301028	A	19930924	(199347)		
FI 9301256	A	19930924	(199349)		
CA 2092141	A	19930924	(199350)	FR	
JP 06009706	A	19940118	(199407)		8
JP 06094482	B2	19941124	(199445)		8
US 5383964	A	19950124	(199510)		6
NZ 247202	A	19950427	(199522)		
US 5417755	A	19950523	(199526)		6
AU 660074	B	19950608	(199531)		
EP 562927	B1	19960703	(199631)	FR	10
R: AT BE CH DE DK ES FR GB IT LI NL PT SE					
DE 69303403	E	19960808	(199637)		
ES 2089745	T3	19961001	(199645)		
CA 2092141	C	19970422	(199729)	FR	
FI 103578	B1	19990731	(199936)		

NO 306118 B1 19990920 (199945)

## APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
EP 562927	A1	EP 1993-400713	19930319
AU 9335352	A	AU 1993-35352	19930322
FR 2688787	A1	FR 1992-3465	19920323
NO 9301028	A	NO 1993-1028	19930322
FI 9301256	A	FI 1993-1256	19930322
CA 2092141	A	CA 1993-2092141	19930322
JP 06009706	A	JP 1993-88123	19930323
JP 06094482	B2	JP 1993-88123	19930323
US 5383964	A	US 1993-35362	19930322
NZ 247202	A	NZ 1993-247202	19930319
US 5417755	A Cont of	US 1993-35362	19930322
		US 1994-262898	19940621
AU 660074	B	AU 1993-35352	19930322
EP 562927	B1	EP 1993-400713	19930319
DE 69303403	E	DE 1993-603403	19930319
		EP 1993-400713	19930319
ES 2089745	T3	EP 1993-400713	19930319
CA 2092141	C	CA 1993-2092141	19930322
FI 103578	B1	FI 1993-1256	19930322
NO 306118	B1	NO 1993-1028	19930322

## FILING DETAILS:

PATENT NO	KIND	PATENT NO
JP 06094482	B2 Based on	JP 06009706
US 5417755	A Cont of	US 5383964
AU 660074	B Previous Publ.	AU 9335352
DE 69303403	E Based on	EP 562927
ES 2089745	T3 Based on	EP 562927
FI 103578	B1 Previous Publ.	FI 9301256
NO 306118	B1 Previous Publ.	NO 9301028

PRIORITY APPLN. INFO: FR 1992-3465 19920323

AB EP 562927 A UPAB: 19931123

**Starch (I)** is **oxidised** by reaction in aq. soln. with **H2O2** and **HBr** or **Br2**, to selectively oxidise the terminal reducing gps. and the reducing gps. of the acid hydrolysis prods., to carboxylic gps.

Also claimed are **amphoteric** starches (II), which carry carboxylic gps. and **cationic** gps., with the carboxylic gps. obtd. by selective oxidn. of the terminal hemiacetal gps. of a **cationic** starch and opt. of the hemiacetal gps. of the acid hydrolysis prods.

The **cationic** gps. on (I) are pref. quat. ammonium gps. The aq. soln. of (I), **H2O2** and halogen cpd. is pref. held at pH below 7 (4-6), and at 20-60 deg. C. the pref. molar ratio of **H2O2**:**Br2** is 1-200, of **H2O2**:**HBr** is 0.5-100, and of **H2O2**:anhydroglucose units in (I) is 0.1-10. After the oxidn., the aq. soln. is pref. treated in order to isolate (II) as a solid ppte., esp. by addn. of an alcohol, pref. (m)ethanol.

USE - (II) are used esp. in paper mfr.

In an example, at 20 deg. C, 0.5 ml. of a 40% aq. soln. of **HBR** was added to a soln. of 5 g of "SSta-Lok" 180 (RTM):: quat. ammonium salt of

starch) in 5 ml of a 30% H2O2 soln. After stirring for 5 hrs., 250 ml of CH3OH was added, and the ppt. was sepd. and dried, giving 5 g of a prod. with 0.15% of carboxylic gps., degree of cationic substn. of 0.03 and viscosity 7.34 square mm/sec. (0.5 wt.% soln.).  
Dwg. 0/0

L89 ANSWER 37 OF 78 WPIDS (C) 2002 THOMSON DERWENT  
ACCESSION NUMBER: 1992-296371 [36] WPIDS  
DOC. NO. NON-CPI: N1992-226592  
DOC. NO. CPI: C1992-132294  
TITLE: Electrophotographic transfer paper having good sizing and toner-fixing properties - contains calcium carbonate filler, **alkyl-ketene dimer** or alkenyl-succinic anhydride as internal sizing agent and surface sizing agent contg. styrene -acrylic acid copolymer.  
DERWENT CLASS: A89 E13 E17 F09 G08 P84 S06  
PATENT ASSIGNEE(S): (MITY) MITSUBISHI PAPER MILLS LTD  
COUNTRY COUNT: 1  
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
JP 04204746	A	19920727	(199236)*		5
JP 3053109	B2	20000619	(200033)		4

## APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
JP 04204746	A	JP 1990-337232	19901130
JP 3053109	B2	JP 1990-337232	19901130

## FILING DETAILS:

PATENT NO	KIND	PATENT NO
JP 3053109	B2 Previous Publ.	JP 04204746

PRIORITY APPLN. INFO: JP 1990-337232 19901130

AB JP 04204746 A UPAB: 19931112

Transfer paper contains CaCO3 as filler, alkylketene dimer or alkenylsuccinic anhydride as an internally added sizing agent and a surface sizing agent which contains styrene-acrylic copolymer as the main component, on the surface.

The content of the styrene is pref. 0.30-0.60 pts. wt. per 1 pt. wt. of the surface sizing agent. The amt. of the surface sizing agent is 0.01-0.1g/m2.

USE/ADVANTAGE - For copying machine, continuous printer, facsimile, full colour copying machine etc. The electrophotographic transfer paper has good fixing properties and good sizing properties.

In an example, 16 pts. wt. styrene, 39 pts. wt. N,N-dimethylaminopropyl acrylamide, 50 pts. wt. toluene and 3.3 wt. pts. AIBN were polymerised at 90 deg.C for 4 hr. After the reaction mixt. had been distilled under vacuum to remove the toluene, The residue was neutralised with aq. ammonia to obtain the objective styrene-acrylic acid copolymer contg. 15 wt. % of styrene. A mixed pulp of 70 pts. wt. LBKP and 30 pts. wt. NBKP was mixed with 7 pts. wt. lightwt. CaCO3 0.1 pt. wt. alkylketene dimer sizing agent and 0.8 pt. wt. amphoteric starch and made into sheet of coverage of 64 g/m2. The sheet was dried at 90 deg.C for 5 min. On the



sheet was applied 1.7 g.m2 of an **oxidised starch** and 0.05 g/m2 of the surface sizing agent prepd. above by a sizing press. The resultant paper was calendered until the surface smoothness became 80 sec. The paper had good toner-fixing properties and good sizing propempl  
Dwg.0/0

L89 ANSWER 38 OF 78 WPIDS (C) 2002 THOMSON DERWENT  
 ACCESSION NUMBER: 1991-065390 [09] WPIDS  
 DOC. NO. NON-CPI: N1991-050597  
 DOC. NO. CPI: C1991-027719  
 TITLE: Binder compsn. used in prodn. of particle board and plywood - contains starch hydrolysate and has low formaldehyde emission.  
 DERWENT CLASS: A11 A21 A81 F09 P63 P73  
 INVENTOR(S): MUKHERJEE, S  
 PATENT ASSIGNEE(S): (BORD) BORDEN INC  
 COUNTRY COUNT: 1  
 PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
US 4992519	A	19910212	(199109)*		

## APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
US 4992519	A	US 1989-304967	19890201

PRIORITY APPLN. INFO: US 1989-304967 19890201

AB US 4992519 A UPAB: 19930928

A polymeric binder (I) for use in prodn. of particle board and plywood with low formaldehyde-emission is claimed comprising the reaction prod. of: (a) 3-40 (pref. 4-25) wt.% of an acidified starch hydrolyzate; (b) urea; and (c) formaldehyde in a molar ratio to the urea of 1:1-1.5:1. A process is also claimed for bonding lignocellulose material by applying (I) and 1-20 wt.% curing agent and then bonding at 100-200 deg.C and 1-30 kg/cm2. Particle board (contg. 5-15 wt.% (I)) and plywood obtd. by this process are also claimed. (I) is applied to the plywood at a rate of 200-400 g (I)/m2 contact surface area. Processes for prepn. of (I) are also claimed.

The starch is pref. selected from wheat flour, maize flour, rice **starch**, corn **starch**, **potato starch**, manioc **starch**, **tapioca** and **oxidized starch**. The curing agent is pref. selected from NH4Cl, (NH4)2SO4, NH4NO3, ammonium thiocyanate and Al(NO3)3. It may additionally comprise urea.

ADVANTAGE - Processes for prepn. of (I) are also claimed.

0/0

L89 ANSWER 39 OF 78 WPIDS (C) 2002 THOMSON DERWENT  
 ACCESSION NUMBER: 1991-329416 [45] WPIDS  
 DOC. NO. NON-CPI: N1991-252159  
 DOC. NO. CPI: C1991-142510  
 TITLE: Low friction coefft. transfer paper - contains friction coefft.-lowering component, e.g. **alkyl ketene dimer**.  
 DERWENT CLASS: E15 G08 P84 S06  
 PATENT ASSIGNEE(S): (TOSH-N) TOSHIBA INTERIJENTO TEKN; (TOKE) TOSHIBA KK

COUNTRY COUNT: 1  
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
JP 03220560	A	19910927	(199145)*		

## APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
JP 03220560	A	JP 1990-15057	19900126

PRIORITY APPLN. INFO: JP 1990-15057 19900126

AB JP 03220560 A UPAB: 19930928

Transfer paper contains a friction coefft.-lowering component which lowers the friction coefft. between the component and its contact component, and which is formed on a base material.

The friction coefft.-lowering component is, e.g., coated layer of alkylketene dimer of formula (I).  $R = C_{14}H_{29}-C_{16}H_{33}$ . The transfer paper comprises, e.g., a base paper, a binder layer and a pigment layer which are formed on the surface of the base paper in order and an alkylketene dimer layer formed on the back of the base material. The pigment is, e.g., kaolin and the binder is, e.g. **oxidised starch**.

USE/ADVANTAGE - The transfer paper is useful for copying machines, printers, etc. The paper prevents paper-feeding problems, e.g., piling of paper, by lowering the friction coefft. between two sheets of paper to, e.g., 0.400.  
0/0

L89 ANSWER 40 OF 78 WPIDS (C) 2002 THOMSON DERWENT

ACCESSION NUMBER: 1991-277185 [38] WPIDS

DOC. NO. CPI: C1991-120150

TITLE: Pressure sensitive **adhesive** for tape - contg. emulsion of pressure sensitive **adhesive** contg. **oxidised starch**, for good adhesion of tape and easily removed from adherend.

DERWENT CLASS: A81 G03

PATENT ASSIGNEE(S): (NAGM) NAGOYA YUKA KK

COUNTRY COUNT: 1

PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
JP 03182580	A	19910808	(199138)*		

## APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
JP 03182580	A	JP 1989-324392	19891213

PRIORITY APPLN. INFO: JP 1989-324392 19891213

AB JP 03182580 A UPAB: 19930928

Emulsion pressure sensitive **adhesive** contains **oxidised starch**. Pref. pressure sensitive **adhesive** emulsion may be selected from various natural or synthetic rubber latexes and synthetic resin emulsions, which show tackiness at normal temps. Emulsion may be

mixt., of emulsions and contain plasticisers, tackifiers, organic solvents, moisture conditioners, fillers, pigments and preservatives. **Oxidised starch** is obtd. by **oxidising starch** in aq. suspension with an oxidising agent selected from Cl<sub>2</sub>, H<sub>2</sub>O<sub>2</sub>, hypochlorites and permanganates and contains carboxyls derived from prim. alcohol and ketone-gps. derived from sec. alcohol gps. **Oxidised starch** increases cohesion of **adhesives** and gives release property to **adhesives**. Pref. amt. is 0.1-30 wt.% to emulsion. It may be added in aq. phase before polymerisation or into prepd. emulsion. Substrate may be selected from various plastic-, foamed plastic or synthetic resin impregnated fibrous-sheets and metal foils.

USE/ADVANTAGE - Used for mfg. pressure sensitive **adhesive** tapes which can be removed from adherents without leaving **adhesive** layer on surfaces of adherents even after transporting, surface treating or long storage. The **adhesive** shows good adhesion and can be easily peeled off from adherents. @ (5pp Dwg.No.0/0)

L89 ANSWER 41 OF 78 CAPLUS COPYRIGHT 2002 ACS  
 ACCESSION NUMBER: 1991:209450 CAPLUS  
 DOCUMENT NUMBER: 114:209450  
 TITLE: Sizes for heat-sensitive recording paper  
 INVENTOR(S): Ogawa, Kenjiro; Kishimoto, Makio; Nakamura, Mikio  
 PATENT ASSIGNEE(S): Kanzaki Paper Mfg. Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 02243386	A2	19900927	JP 1989-66685	19890317

AB Paper is sized with copolymers of diisobutylene (I) with <1 of maleic anhydride, maleic acid, maleate salt, or its partial esters and has dynamic wetting barrier -0.40 to 0 g. Thus, paper was sized with 0.1 g/m<sup>2</sup> ammonium maleate-I copolymer and 2.0 g/m<sup>2</sup> **oxidized starch** and had dynamic wetting barrier -0.25, color concn. 1.20, resistance to plasticizers good, and whiteness 75.7, compared with -0.35, 1.24, pore, and 76.0, resp., for using an **alkyl ketene dimer**.

L89 ANSWER 42 OF 78 WPIDS (C) 2002 THOMSON DERWENT  
 ACCESSION NUMBER: 1990-243086 [32] WPIDS  
 DOC. NO. CPI: C1990-105339  
 TITLE: Speciality paper for postcards, etc. - has one side with good offset and gravure printability and other side with good letterpress and wood-cut printability.  
 DERWENT CLASS: F09  
 PATENT ASSIGNEE(S): (OJIP) OJI PAPER CO  
 COUNTRY COUNT: 1  
 PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
JP 02169796	A	19900629	(199032)*		

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
JP 02169796	A	JP 1988-322937	19881221

PRIORITY APPLN. INFO: JP 1988-322937 19881221

AB JP 02169796 A UPAB: 19930928

The speciality paper contg. at least 5.0 % of fillers has one side with pene-and-ink sizing deg. of at least 4.0 and higher smoothness and the other side with pen-and-ink sizing degree of up to 3.0 and lower smoothness.

USE/ADVANTAGE - The speciality paper is suitable for postcards and cards. One side has good offset and gravure printability while the other side has good letterpress and woodcut printability.

In an example, an **alkyl ketene dimer** -type sizing agent (0.15 % of pulp), pptd. CaCO<sub>3</sub>) (corresp. to 10 % ash content of paper), and cationised starch (0.5 % of pulp) are added to a pulp slurry (hardwood BKP : softwood BKP = 95 : 5, freeness 550 cc and the mixt. is made into paper. A felt surface is closely attached to the web in a dehydrating press to form a cloth-like roughness on the wire side of the wet web. After drying its wire side is coated with a 5.0 % soln. of **oxidised starch**, and its felt side is coated with a soln. of **oxidised starch**, PVA, and a sizing agent (90:5:5). Then the coated paper is dried and calendered to obtain speciality paper. Its felt side has (1) smoothness of 13 secs. TAPPI standard T479 om-81 (2) sizing degree of 5 sec and good offset printability while its wire side has (1) of 9 sec, (2) of 3 sec and good woodcut printability. @  
0/0

L89 ANSWER 43 OF 78 WPIDS (C) 2002 THOMSON DERWENT

ACCESSION NUMBER: 1990-034408 [05] WPIDS

DOC. NO. CPI: C1990-015197

TITLE: Mfg. **oxidised starch** for foodstuffs -  
by reacting starch with oxidant, adding alkaline lower alcohol, filtering, adding water, adjusting pH, filtering and washing.

DERWENT CLASS: D13

PATENT ASSIGNEE(S): (KOKU-N) KOKUSAN GIJUTSU KEN; (KOKU-N) KOKUSAN GIJUTSU KENKYUSHO

COUNTRY COUNT: 1

PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
JP 01313501	A	19891219	(199005)*		4
JP 05045602	B	19930709	(199330)		3

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
JP 01313501	A	JP 1988-142775	19880611
JP 05045602	B	JP 1988-142775	19880611

FILING DETAILS:

PATENT NO	KIND	PATENT NO
JP 05045602	B Based on	JP 01313501

PRIORITY APPLN. INFO: JP 1988-142775 19880611

AB JP 01313501 A UPAB: 19930928

Process comprises adding alkaline lower alcohol having 2C or more to **oxidised starch** prepd. by reacting starch with an oxidant, keeping the alcohol suspension at temp. lower than the b.pt. of the alcohol, then filtering out the lower alcohol, adding water to the obtd. deoxidised starch, controlling pH of the aq. suspension of neutral or slightly alkaline condition, filtering and washing.

Pref. alkaline alcohol has pH, 11-12 and concn. 85-90%. Reaction is at 40-60 deg C, for 3-5 hrs. Raw **starch** is **potato starch**, sweet **potato starch**, **tapioca starch**, corn **starch** or wheat starch.

ADVANTAGE - Increases clarity of gelatinised **oxidised starch** liquor even after cooling.  
0/0

L89 ANSWER 44 OF 78 WPIDS (C) 2002 THOMSON DERWENT

ACCESSION NUMBER: 1989-253954 [35] WPIDS

DOC. NO. NON-CPI: N1989-193577

DOC. NO. CPI: C1989-113196

TITLE: Ink jet recording material - contg. polyacrylamide, synthetic amorphous silica and or polyvinyl alcohol.

DERWENT CLASS: A14 A97 F09 G05 P75

PATENT ASSIGNEE(S): (MITY) MITSUBISHI PAPER MILLS LTD

COUNTRY COUNT: 1

PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
JP 01186372	A	19890725	(198935)*		12
JP 07055580	B2	19950614	(199528)		9

## APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
JP 01186372	A	JP 1988-1655	19880120
JP 07055580	B2	JP 1988-11655	19880120

## FILING DETAILS:

PATENT NO	KIND	PATENT NO
JP 07055580	B2 Based on	JP 01186372

PRIORITY APPLN. INFO: JP 1988-1655 19880120; JP 1988-11655 19880120

AB JP 01186372 A UPAB: 19930923

Ink jet recording material contains (a) polyacrylamide with MW 10,000-500,000 (b) synthetic amorphous silica and/or (c) PVA.

BET specific surface area of synthetic amorphous silica is at least 180 m<sup>2</sup>/g refractive index is 1.43-1.48, and vol ave particle size of the sec agglomeration particle is at least 95% for 1-40 microns.

Saponification deg of PVA is at least 87 mol%, polymerisation deg is 300-2000. Polyacrylamide is cationic or nonionic. Recording material may contain filler (e.g., calcium carbonate, kaolin, talc, zinc, oxide, aluminum silicate, etc), binder (e.g., **oxidised starch** CMC, HEC, casein, gelatin, etc), etc.

USE/ADVANTAGE - The recording material is recorded by using water

based ink contg substantive colour, acid dyestuff, basic dye, reactive dye and/or food additive dye. It improves preservation property.  
0/0

L89 ANSWER 45 OF 78 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1990:101062 CAPLUS

DOCUMENT NUMBER: 112:101062

TITLE: Preparation of starch-based **adhesive**

INVENTOR(S): Mezynski, Leonard; Slawski, Michal

PATENT ASSIGNEE(S): Centralne Laboratorium Przemyslu Ziemniaczanego, Pol.

SOURCE: Pol., 8 pp.

CODEN: POXXA7

DOCUMENT TYPE: Patent

LANGUAGE: Polish

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PL 144862	B1	19880730	PL 1986-258558	19860321

AB An aq. **starch** suspension is **oxidized** by using NaClO (contg. 3-5.5% active Cl) at .ltoreq.35.degree. by decreasing pH from .apprx.11 to .apprx.4.5. The resulting 25% aq. **oxidized starch** soln. (viscosity 10-70 mPa-s at 75.degree.) is addnl. esterified, and the resulting depolymd. starch is dewatered, washed, and dried to the moisture content .ltoreq.20%. Then, 8-20% urea and(or) NaNO3 (anhyd. starch basis) is added, and the mixt. is homogenized. The product is suitable for bonding of fibers, and manuf. of **sandpapers** and **adhesive** tapes. Thus, 100 kg potato starch and NaClO (contg. 4.0 kg active Cl) were added to 120 L water, and the pH was decreased from 11.5 to 5 at 30.degree.. Then, esterification was done at pH 8-9.5 by using 4 L Ac2O and NaOH. Then, starch was dehydrated and dried to moisture content 18%. The resulting starch (viscosity 45 mPa-s at 75.degree.) was mixed with 10 kg NaNO3 and 5 kg urea and homogenized. The product was sol. in cold water and formed glossy **coatings**.

L89 ANSWER 46 OF 78 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1989:233479 CAPLUS

DOCUMENT NUMBER: 110:233479

TITLE: Treatment of heavy calcium carbonate for paper **coating**

INVENTOR(S): Furuta, Kiyotaka; Saijo, Yoshihiko; Wakizaka, Akira; Yokoyama, Kiyonori

PATENT ASSIGNEE(S): Oji Paper Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 63225522	A2	19880920	JP 1987-228266	19870914
JP 2561097	B2	19961204		

PRIORITY APPLN. INFO.: JP 1986-239074 19861009

AB The title process for obtaining coarse particle-free CaCO3 with high water retention, providing **coatings** free from streaks or roll patterns and with reduced **coating** blade wear involves sand milling of

30-85%-solids heavy CaCO<sub>3</sub> dispersion to A = 0.05-0.7, B .ltoreq. -44.48A<sup>3</sup> + 66.77A<sup>2</sup> - 33.42A + 7.04, and B = 1.0-4.5, where A and B are surface area (m<sup>2</sup>/g) before and after milling, resp. Heavy CaCO<sub>3</sub> (A 0.05 m<sup>2</sup>/g; 75%-solids) was sand milled in the presence of an acrylic dispersant to B 4.4 m<sup>2</sup>/g and coarse particle (>5 .mu.) content 1.5% and used with kaolin, **oxidized starch**, and SBR latex to provide paper **coatings** with good surface smoothness and gloss.

L89 ANSWER 47 OF 78 CAPLUS COPYRIGHT 2002 ACS  
 ACCESSION NUMBER: 1989:233763 CAPLUS  
 DOCUMENT NUMBER: 110:233763  
 TITLE: Heat exchange elements for gas heat exchanger  
 INVENTOR(S): Saito, Naohide; Tamura, Junichi; Take, Shigeo;  
 Kurosawa, Masaji; Terada, Isao  
 PATENT ASSIGNEE(S): Nippon Oil Co., Ltd., Japan  
 SOURCE: Ger. Offen., 12 pp.  
 CODEN: GWXXBX  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 3816466	A1	19881208	DE 1988-3816466	19880513
PRIORITY APPLN. INFO.:			JP 1987-116793	19870515

AB The heat exchange element comprises a laminated plate or a honeycomb, formed from a plate prepd. from acid-resistant **glass fibers** and an inorg. filler material. The plate is immersed in a suspension of the filler material contg. flakes of C glass as well as mica powder and SiO<sub>2</sub> or ZrO<sub>2</sub> powder. The **coating** is fixed with an org. binder, e.g., a vinyl acetate resin. The overall compn. of the plate is .gtoreq. 88% SiO<sub>2</sub> and ZrO<sub>2</sub>. The heat exchanger comprises a heat exchange element with parallel flow paths or with orthogonal or crossflow paths for the gases. The surface binding of the filler material on the heat exchange element reduces the air permeability and increases the acid resistance, as shown in examples.

L89 ANSWER 48 OF 78 CAPLUS COPYRIGHT 2002 ACS  
 ACCESSION NUMBER: 1989:137397 CAPLUS  
 DOCUMENT NUMBER: 110:137397  
 TITLE: **Adhesives** for paper boxes and its preparation  
 INVENTOR(S): Lei, Hua  
 PATENT ASSIGNEE(S): Peop. Rep. China  
 SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 7 pp.  
 CODEN: CNXXEV  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Chinese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 86108849	A	19880803	CN 1986-108849	19861222

AB **Adhesives** are prepd. from **starch**, NaOCl and H<sub>2</sub>O<sub>2</sub> (**oxidizing agents**), FeSO<sub>4</sub> or Na sulfate (**catalysts**), Na thiosulfate or Na<sub>2</sub>SO<sub>3</sub> (reducing agents), etc. Thus, water 400, 30% H<sub>2</sub>O<sub>2</sub> 9.3, and starch 200 kg were stirred, mixed with 150 g 0.5% FeSO<sub>4</sub>, stirred, mixed with 54 kg 10% NaOH, stirred

.apprx.1 h, defoamed with tri-Bu phosphate, and mixed with water 200, 40% borax 4, and 10% sodium thiosulfate 1.3 kg to prep. an **adhesive**.

L89 ANSWER 49 OF 78 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1989:137398 CAPLUS

DOCUMENT NUMBER: 110:137398

TITLE: Preparation of starch **adhesive** for paperboard

INVENTOR(S): Wang, Xiangeng; Zhao, Yongjin

PATENT ASSIGNEE(S): Xinjiang Shihezi Agriculture College, Peop. Rep. China

SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 4 pp.

CODEN: CNXXEV

DOCUMENT TYPE: Patent

LANGUAGE: Chinese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 86105145	A	19880217	CN 1986-105145	19860809
CN 1008106	B	19900523		

AB **Adhesives** are prepd. by **oxidizing starch**

with **H2O2**, gelatinizing with NaOH, neutralizing with acids, and mixing with stabilizers. Thus, 100 g cornstarch in 200 mL water was heated to 45-15.degree., mixed with 2 g FeSO4 at 40.degree., oxidized with 20 mL water contg. 4 mL 30% **H2O2**, mixed with 8 mL water at pH 3-4, gelatinized with 65-70 mL 10% aq. NaOH, neutralized with H2SO4 to pH 7-8, mixed with 1-2 g borax and 4-13 g urea-formaldehyde resin, and dild. with water to prep. an **adhesive**.

L89 ANSWER 50 OF 78 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1989:233423 CAPLUS

DOCUMENT NUMBER: 110:233423

TITLE: Effects of **oxidized** and cationic **starch** at the size press on sizing degree and strength properties of paper

AUTHOR(S): Lee, Chang Jeon; Shin, Dong So

CORPORATE SOURCE: Coll. Agric., Seoul Natl. Univ., Suwon, 440-744, S. Korea

SOURCE: Palpu, Chonggi Gisul (1988), 20(2), 5-16

CODEN: PCGIDY; ISSN: 0253-3200

DOCUMENT TYPE: Journal

LANGUAGE: Korean

AB **Oxidized starch** size penetrated and was almost evenly

distributed within a paper sheet, but cationic starch remained on the surface. Oxidized-cationic mixts. in ratio 1:1 and 3:1 penetrated deeply, but were less evenly distributed within the sheet than **oxidized starch** only. The more **alkyl ketene**

**dimer** (AKD) was added, the less was the Cobb sizing effect.

Cationic starch gave the highest Cobb value, followed by mixed starch with 1:1 ratio, **oxidized starch**, and mixed **starch**

with 3:1 ratio. As the concn. of surface size was increased, the effect of sizing degree was decreased. As the amt. of AKD added to

**oxidized starch** was increased, the internal bonding

strength of the sheets was decreased. For mixed starches and cationic

starch, the strength was decreased and then increased at the level of

0.02% AKD addn. **Oxidized starch** provided the highest

strength followed by 3:1 starch and cationic starch, while 1:1 starch had no effect at 5% addn. **Oxidized starch** with the

largest wax pick-up gave the highest surface strength, and cationic starch



the lowest. As the concn. of starch increased, both tensile strength and burst strength increased. For strength improvement, **oxidized starch** was the best, followed by 3:1 starch, 1:1 starch, and cationic starch in order.

L89 ANSWER 51 OF 78 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1987:578459 CAPLUS

DOCUMENT NUMBER: 107:178459

TITLE: Manufacture of **paper** supports for **abrasives**

INVENTOR(S): Rusan, Viorica; Pomponiu, Georgeta; Ioan, Silvia; Diaconescu, Margareta; Stoleriu, Aurel; Sfrijan, Vasile; Cotozana, Corneliu

PATENT ASSIGNEE(S): Intreprinderea de Hirtie, Busteni, Rom.

SOURCE: Rom., 2 pp.  
CODEN: RUXXA3

DOCUMENT TYPE: Patent

LANGUAGE: Romanian

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
RO 89806	B1	19860730	RO 1984-116028	19841018

AB Water-resistant **paper** supports for **abrasives** are prepd. from 30:70 hardwood-softwood pulp mixts. treated with 2% modified rosin, 1-2% epichlorohydrin (I) resin, 3-6% urea or melamine resin, 0-15% acrylic acid (II)-BuOAc-EtOAc-styrene mixt., and Al<sub>2</sub>(SO<sub>4</sub>)<sub>3</sub> (to pH 4.5-5) with post treatment by a mixt. of **oxidized starch** soln. and the II-BuOAc-EtOAc-styrene mixt. Adding 2% modified rosin, 1% I resin, 3% urea-HCHO resin, 4% II-BuOAc-EtOAc-styrene mixt., defoamer, and Al<sub>2</sub>(SO<sub>4</sub>)<sub>3</sub> (to pH 4.5-5) to a 30:70 hardwood-softwood pulp mixt., processing the pulp into paper, dewatering and drying at 100.degree., sizing in a press with a 1:1 mixt. of 6% aq. **oxidized starch** and II-BuOAc-EtOAc-styrene mixt., and drying at 100.degree. gave paper (105 g/m<sup>2</sup>) with lengthwise and crosswise breaking stress 13 and 7.5 dN, resp., lengthwise and crosswise break elongation 1.5 and 2.4%, resp., Gurley air permeability 80 s/100 cm<sup>3</sup>, and Cobb water absorptivity 16-24 g/m<sup>2</sup>.

L89 ANSWER 52 OF 78 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1986:131792 CAPLUS

DOCUMENT NUMBER: 104:131792

TITLE: Neutral paper

INVENTOR(S): Katsura, Toru

PATENT ASSIGNEE(S): Mitsubishi Paper Mills, Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 60185894	A2	19850921	JP 1984-41759	19840305
JP 03068158	B4	19911025		

AB Neutral paper having excellent degree of sizing is manufd. by surface sizing with sizes comprising org. ketene dimers, starch tertiary amine derivs. (substitution degree 0.035-0.070) and aq. solns. of anionic

acrylic monomer-styrene copolymers. Thus, paper was manufd. from a mixt. of hardwood bleached kraft pulp 80, softwood bleached kraft pulp 20, Hydrocarb 60 (CaCO<sub>3</sub>) 10, talc 10, corn starch modified with .beta.-diethylaminoethyl chloride (substitution degree 0.050) 0.50, and Hercon W (**alkyl ketene dimer**) 0.20 parts and sized with an aq. soln. contg. Nisshoku MS 3800 (**oxidized starch**) and Coloppearl M 150 (anionic acrylic monomer-styrene copolymer soln.). The paper showed initial Stoechigt sizing degree 27 s and 33 s after 1 wk, compared with 0 and 0, resp., for a paper obtained similarly without Hercon W.

L89 ANSWER 53 OF 78 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1985:489286 CAPLUS  
DOCUMENT NUMBER: 103:89286  
TITLE: Cross-bonded starch  
INVENTOR(S): Fitton, Michael George; Gonze, Michel  
PATENT ASSIGNEE(S): CPC International Inc. , USA  
SOURCE: Eur. Pat. Appl., 10 pp.  
CODEN: EPXXDW  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 143643	A1	19850605	EP 1984-308220	19841127
EP 143643	B1	19880113		
EP 143643	B2	19951115		
R: AT, BE, DE, FR, GB, IT, NL, SE				
FI 8404553	A	19850529	FI 1984-4553	19841120
FI 75350	B	19880229		
FI 75350	C	19880609		
AU 8435742	A1	19850606	AU 1984-35742	19841121
AU 570519	B2	19880317		
BR 8405952	A	19850910	BR 1984-5952	19841122
ES 537990	A1	19851101	ES 1984-537990	19841127
AT 31934	E	19880115	AT 1984-308220	19841127
JP 60186501	A2	19850924	JP 1984-249821	19841128
JP 05045601	B4	19930709		

PRIORITY APPLN. INFO.: GB 1983-31712 19831128  
EP 1984-308220 19841127

AB A process for crosslinking starch (I) comprises pretreating I with H<sub>2</sub>O<sub>2</sub> and then reacting the pretreated I with Ac<sub>2</sub>O and adipic acid (II). The pretreatment of I with H<sub>2</sub>O<sub>2</sub> enhanced the crosslinking effect of II. Crosslinked I is useful as thickener for food. Thus, a I slurry at 20-22 Be was treated with H<sub>2</sub>O<sub>2</sub> at pH 8.0-8.5, followed by reaction with Ac<sub>2</sub>O and II for 45-60 min at pH 8.0-8.5. The acidified and washed product had shear stability (400 rpm for 5 min) 7.0, acid stability (pH 2.5) 1.96, and heat stability (120.degree. for 30 min) 1.70 vs. 0.95, 1.0, and 1.05, resp. for crossbonded I without pretreatment with H<sub>2</sub>O<sub>2</sub>.

L89 ANSWER 54 OF 78 WPIDS (C) 2002 THOMSON DERWENT

ACCESSION NUMBER: 1984-316466 [51] WPIDS  
DOC. NO. CPI: C1984-135295  
TITLE: Yarn sizing soln. - with emulsion of acrylic copolymer of sizing agent and acrylic or methacrylic acid.  
DERWENT CLASS: A14 A87 F06

PATENT ASSIGNEE(S): (GOOU) GOO CHEM IND CO LTD  
COUNTRY COUNT: 1  
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
JP 59199867	A	19841113	(198451)*		7

## APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
JP 59199867	A	JP 1983-71007	19830421

PRIORITY APPLN. INFO: JP 1983-71007 19830421

AB JP 59199867 A UPAB: 19930925

In **sizing** of filament **yarn**, spun yarn, etc. by means of a high pressure squeezing roller, a low viscosity polymer emulsion obtained by emulsion copolymerisation of a monomer mixt. consisting of 88-50 wt.% of (meth)acrylic ester which is copolymerisable with water-soluble sizing agent and 50-12 wt.% of (meth)acrylic acid, is added to sizing soln.

The water soluble sizing agents are e.g. (partly saponified) polyvinyl alcohol, partly saponified copolymer of (meth)acrylic ester, polyacrylic acid/vinyl acetate/maleic acid copolymer, styrene/maleic acid copolymer, soluble **starch**, **oxidised starch**, esterified **starch**, carboxymethylcellulose and corn starch.

ADVANTAGE - Sharp increase of viscosity of sizing soln. is prevented.  
0/0

L89 ANSWER 55 OF 78 WPIDS (C) 2002 THOMSON DERWENT

ACCESSION NUMBER: 1984-216200 [35] WPIDS

DOC. NO. CPI: C1984-090938

TITLE: Dye fixative for cellulose fibres - consists of PVA and/or starch and polymer obtd. from cationic unsatd. monomer.

DERWENT CLASS: A18 A87 F06

PATENT ASSIGNEE(S): (SANN) SANYO CHEM IND LTD

COUNTRY COUNT: 1

PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
JP 59125986	A	19840720	(198435)*		14

## APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
JP 59125986	A	JP 1982-231042	19821228

PRIORITY APPLN. INFO: JP 1982-231042 19821228

AB JP 59125986 A UPAB: 19930925

The fixative consists of (1) high molecular cpd. selected from PVA and starches and (2) polymer of cationic unsatd. monomer in the ratio of 1:99 to 50:50, pref. 10:90 to 20:80 by wt.

Component (2) is acid salt of sec. or tert. amino gp.-contg. monomer and/or quaternarised tert. amino gp.-contg. monomer. Pref. are acid salts

of sec. or tert. amino gp.-contg. (meth)acrylate and di(meth)allylamine and their mixt. The PVA has an average polymerisation degree of 300-2500 and a saponification degree of 80-100 mol.%. The **starches** include corn, **potato**, sweet potato, rice and **tapioca starches** and processed **starches** such as **oxidised**, cationised and etherised **starches**.

ADVANTAGE - The fixative improves colour fastness of cellulosic fibre dyed with direct dye and/or reactive dye.  
0/0

L89 ANSWER 56 OF 78 WPIDS (C) 2002 THOMSON DERWENT  
ACCESSION NUMBER: 1984-173711 [28] WPIDS  
DOC. NO. NON-CPI: N1984-129477  
DOC. NO. CPI: C1984-073399  
TITLE: Ink jet recording paper - has back sizing effected using e.g. **oxidised starch** to prevent strike through phenomena.  
DERWENT CLASS: A97 F09 G05 P75  
PATENT ASSIGNEE(S): (MATU) MATSUSHITA ELEC IND CO LTD  
COUNTRY COUNT: 1  
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
JP 59095187	A	19840601	(198428)*		6

## APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
JP 59095187	A	JP 1982-205164	19821122

PRIORITY APPLN. INFO: JP 1982-205164 19821122

AB JP 59095187 A UPAB: 19930925

The paper has back and surface with different sizing degrees. The paper is produced by sizing the back of (A) a recording paper which has Stoechigt sizing degree of 0-10 sec.

Pref. sizing agent is a natural polymer, e.g. **oxidised starch**, etc., synthetic polymers, e.g. acrylamide series, etc., synthetic sizing agent, e.g. petroleum resins, etc., esp. glue, CMC, PVA, **alkyl ketene dimer**, etc. The back sizing is carried out so that the treated recording paper has Stoechigt sizing degree of 3-20. The recording paper treated is single or coated paper.

ADVANTAGE - The paper has excellent ink-absorption properties and water resistance even at a high humidity without deteriorating the recording characteristics.

0/0

L89 ANSWER 57 OF 78 CAPLUS COPYRIGHT 2002 ACS  
ACCESSION NUMBER: 1984:176750 CAPLUS  
DOCUMENT NUMBER: 100:176750  
TITLE: Ink-jet printing paper  
PATENT ASSIGNEE(S): Jujo Paper Co., Ltd., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 58008685	A2	19830118	JP 1981-106970	19810710
JP 63052588	B4	19881019		

AB Ink-jet printing papers are prepd. by forming paper from pulp slurries contg. a silicic acid salt and a wet-strength agent and optionally contg. **glass fibers** and then coating the paper with a water-sol. polymer. Thus, a slurry contg. pulp 100, **glass fibers** 3, Zeolex 17S (silicic acid salt) 30, and Kymene 557 [25212-19-5] 0.5 part was passed through a papermaking machine. The formed paper was coated (4.5 g/m<sup>2</sup>) with **oxidized starch** to give an ink-jet printing paper with resistance to ink oozing.

L89 ANSWER 58 OF 78 CAPLUS COPYRIGHT 2002 ACS  
 ACCESSION NUMBER: 1983:531278 CAPLUS  
 DOCUMENT NUMBER: 99:131278  
 TITLE: Photographic paper support  
 INVENTOR(S): Kemme, Gregor  
 PATENT ASSIGNEE(S): Schoeller, Felix, Jr., G.m.b.H. und Co. K.-G., Fed. Rep. Ger.  
 SOURCE: Ger. Offen., 18 pp.  
 CODEN: GWXXBX  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 3145793	A1	19830526	DE 1981-3145793	19811119
DE 3145793	C2	19860424		
GB 2134939	A1	19840822	GB 1983-3157	19830204
GB 2134939	B2	19860102		
FR 2540643	A1	19840810	FR 1983-1957	19830208
FR 2540643	B1	19890804		
US 4504576	A	19850312	US 1983-466584	19830215

PRIORITY APPLN. INFO.: DE 1981-3145793 19811119

AB Fog formation in water-resistant photog. papers using a paper support which has neutral internal sizing can be decreased by addn. to the sizing compn. of a polycarboxylic acid whose acid groups are sepd. from one another by 3 C atoms at most and/or a hydroxy acid capable of inner complex formation. The acid may also be in the form of an amide or an ammonium salt. Thus, a paper treated with an **alkyl ketene dimer** 0.3 and a polyaminoamide epichlorohydrin resin 1.5 wt.% was sized on both sides with an aq. soln. contg. **oxidized starch** 6, NaCl 2, an optical brightener 0.2, citric acid 5, and water 86.8 wt.%. The resultant support was then coated with a nonstabilized gelatin-AgBr emulsion, stored 4 days at 56.degree., and then developed to show a fog of 0.08 vs. 0.35 for a control contg. no citric acid.

L89 ANSWER 59 OF 78 CAPLUS COPYRIGHT 2002 ACS  
 ACCESSION NUMBER: 1983:518234 CAPLUS  
 DOCUMENT NUMBER: 99:118234  
 TITLE: Rapid enzymic determination of glucoamylase  
 AUTHOR(S): Wang, Bofei  
 CORPORATE SOURCE: Shanghai Univ. Sci. Technol., Shanghai, Peop. Rep. China  
 SOURCE: Huaxue Shijie (1983), 24(2), 42-4

CODEN: HUAKAB; ISSN: 0367-6358

DOCUMENT TYPE: Journal  
LANGUAGE: Chinese

AB The activity of glucoamylase (I) was detd. by a rapid enzymic method in a reaction mixt. contg. sol. starch, glucose oxidase, peroxidase, and o-dianisidine (II). The glucose released from the sol. **starch** by I was **oxidized** to produce gluconic acid and **H2O2**, and I activity was detd. by measuring the absorption at 460 nm of oxidized II formed from **H2O2** and II in the presence of peroxidase. A typical reaction mixt. contained 0.1M acetate buffer (pH 5.5), 0.25% sol. starch, 30 units glucose oxidase, 50 units peroxidase, and 0.5 unit I; the final vol. was 4 mL with incubation temp. and time of 40.degree. and 3 min, resp. The enzymic method was rapid, simple, and specific for monitoring I activity in fermn., **food**, and other I-assocd. industries.

L89 ANSWER 60 OF 78 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1982:440605 CAPLUS  
DOCUMENT NUMBER: 97:40605  
TITLE: **Coating** compositions for paper  
PATENT ASSIGNEE(S): Oji Paper Co., Ltd., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 57025499	A2	19820210	JP 1980-99395	19800722

AB Sand mills are used to disperse pigments and starch derivs. in the prepn. of **coating** comps. for paper. Thus, no. 1 kaolin 25, no. 2 kaolin 50, heavy CaCO3 13, TiO2 2, Al(OH)3 10, **oxidized starch** 5, and poly(Na acrylate) 0.3 parts were dispersed in water with a propeller mixer and the pH of 67% solids dispersion was adjusted to 9 with NaOH. The dispersion was processed in a sand mill heated with water at .apprx.90.degree. and requiring 0.7 kW power to drive the motor, mixed (105 parts solids) with 10 parts JSR 0692, dild. with water to solids content 64%, and used to coat paper. A similar dispersion having solids concn. 67% and contg. no **oxidized starch** required >3 kW to drive the motor.

L89 ANSWER 61 OF 78 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1982:617994 CAPLUS  
DOCUMENT NUMBER: 97:217994  
TITLE: Dry blend sizing composition  
INVENTOR(S): Smid, Josef; Prochazka, Stanislav; Grasseova, Hedvika; Ulmer, Karel; Neubauerova, Marie  
PATENT ASSIGNEE(S): Czech.  
SOURCE: Czech., 5 pp.  
CODEN: CZXXA9  
DOCUMENT TYPE: Patent  
LANGUAGE: Czech  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CS 196564	B	19800331	CS 1975-5944	19750902

AB Stable sizes suitable for high-speed weaving processes comprise **modified** starch and cellulose **derivs.** and water-sol. polyacrylates. Thus, a powd. mixt. of 80 parts **oxidized** potato **starch** and 10 parts CM cellulose [9004-32-4] was gradually treated with 40 parts of an aq. 25% soln. of a polyacrylate resin which caused aggregation and partial swelling of the starch particles but permitted retention of the powd. consistency. The product was dried at 100-20.degree. and used for mixed polyester fibers.

L89 ANSWER 62 OF 78 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1981:408751 CAPLUS  
DOCUMENT NUMBER: 95:8751  
TITLE: Sizing agents for polyester fibers  
PATENT ASSIGNEE(S): Nichiden Kagaku Co., Ltd., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 56020680	A2	19810226	JP 1979-92793	19790720

AB Monoesters of a polyvalent fatty acid anhydride with **oxidized starch** grafted with a hydroxyalkyl (meth) acrylate are useful as **sizing** agents for polyester **yarns**. Thus, 3 kg aq. 15% **oxidized starch** was grafted with 300 mL hydroxypropyl methacrylate and the resulting polymer with graft wt. increase 4.2% was esterified with 20 g maleic anhydride to give a **modified** starch (I). Yarn-to-size adhesion was good in coating polyester yarns with a compn. contg. 10% I, whereas this adhesion was poor for yarns sized with poly(vinyl alc.).

L89 ANSWER 63 OF 78 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1981:200786 CAPLUS  
DOCUMENT NUMBER: 94:200786  
TITLE: Photographic paper  
INVENTOR(S): Katsura, Toru; Kubota, Massashi  
PATENT ASSIGNEE(S): Mitsubishi Paper Mills, Ltd., Japan  
SOURCE: Ger. Offen., 22 pp.  
CODEN: GWXXBX  
DOCUMENT TYPE: Patent  
LANGUAGE: German  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 3035318	A1	19810409	DE 1980-3035318	19800918
DE 3035318	C2	19901213		
JP 56043637	A2	19810422	JP 1979-120489	19790919
JP 58043730	B4	19830928		
GB 2058866	A	19810415	GB 1980-29004	19800908
GB 2058866	B2	19830202		
US 4482628	A	19841113	US 1980-186450	19800912
PRIORITY APPLN. INFO.:			JP 1979-120489	19790919

AB Most sizing agents or other chem. additives, particularly of the cationic type, such as polyacrylamides, epoxidized polyamines, and polyethyleneimine, in paper decomp., resulting in adverse effects on the

Ag halide emulsion coatings. These effects can be minimized by the addn. of 0.1-1.0% of an oxide or slightly acid salt (carbonate, silicate, oxalate) of Mg, Ca, or Zn. Thus, 1:1 bleached hard-soft wood pulp mixt. 450 mL was mixed with Mg silicate 0.5, **oxidized starch** 2.0, and **alkyl ketene dimer** 0.6, and a polyamine-polyamide epichlorohydrin resin 0.8%. Sheets of 160 g/m<sup>2</sup> paper were made with a TAPPI machine and kept on a cylindrical drier at 105.degree. for 10 min. After storage in contact with a color photog. paper at 50.degree. and 65% relative humidity for 10 days, development of the color paper produced a fog d. of 0.27 vs. 0.68 for the Mg silicate-free pulp.

L89 ANSWER 64 OF 78 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1981:517015 CAPLUS

DOCUMENT NUMBER: 95:117015

TITLE: Sizing composition based upon **modified** natural and synthetic macromolecular materials

INVENTOR(S): Smid, Josef; Jelinek, Milan; Ulmer, Karel; Hudecek, Zdenek

PATENT ASSIGNEE(S): Czech.

SOURCE: Czech., 4 pp.

CODEN: CZXXA9

DOCUMENT TYPE: Patent

LANGUAGE: Czech

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CS 186653	M	19781229	CS 1975-5804	19750826

AB Addn. of cellulose **derivs.** increased the stability of macromol. systems present in sizes described in Czech. 179,556. For example, a mixt. of **oxidized** potato **starch** Special 67.8, Lovosa TS-20 (CM-cellulose) [9004-32-4] 15.2, and **modified** polyacrolein 5.1 parts was homogenized, treated with 47.6 parts of a 25% aq. soln. of Sokrat 54 [62629-02-1] (a polyacrylate multipolymer), and dried at 120.degree. to give a size for mixed cotton-polyester warps.

L89 ANSWER 65 OF 78 WPIDS (C) 2002 THOMSON DERWENT

ACCESSION NUMBER: 1981-22394D [13] WPIDS

TITLE: Mfr. of starch esterified by acetoacetic acid - which may be crosslinked to provide waterproofing activity or improve adhesion performance.

DERWENT CLASS: All D17

PATENT ASSIGNEE(S): (NISY) NIPPON SYNTHETIC CHEM IND CO

COUNTRY COUNT: 1

PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
JP 56011902	A	19810205	(198113)*		

PRIORITY APPLN. INFO: JP 1979-87866 19790710

AB JP 56011902 A UPAB: 19930915

Starch or its deriv. (e.g. corn **starch**, **tapioca**, wheat flour, **potato starch**, product prepd. by heating an acidic emulsion of starch at a temp. of less than gelation temp., **oxidised starch**, dialdehyde **starch** and



dextrin) is stirred or fluidised and reacted with a diketene opt. in the presence of a solvent or non-solvent (e.g. those inert to the diketene and which is a non-solvent to the starch and esterified starch, e.g. acetone, methylethyl ketone, hexane, heptane, benzene and toluene,) e.g. by absorbing or occluding the solvent into the starch and then spraying the liq. ketene at 20-120 deg.C onto the moistened starch in an inert atmos. or contacting the gaseous diketene with the starch at 30-250 deg.C or by spraying a mixt. of the liquid diketene and solvent or non-solvent onto the starch in the presence of a esterifying catalyst (e.g. Na or K acetate, prim. sec. or tert amine) (0.01-20 wt.%).

The esterified starch may be used in the same manner as starch. It is crosslinked with an aldehyde or polyvalent metallic cpd. to provide water proofing activity or improve the adhesion performance.

L89 ANSWER 66 OF 78 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1981:210164 CAPLUS

DOCUMENT NUMBER: 94:210164

TITLE: Modified starch coatings for glass fibers

AUTHOR(S): Boruch, M.; Pokorski, Z.; Wedzonka, S.

CORPORATE SOURCE: Polytech. Lodz, Lodz, Pol.

SOURCE: Chemiefasern/Text.-Ind. (1981), 31(2), 139-40

CODEN: CFTXAJ; ISSN: 0340-3343

DOCUMENT TYPE: Journal

LANGUAGE: German

AB Evaluation of 4 modified starch sizes, i.e., Polotex [52337-05-0] lightly oxidized starch, Esamyl (starch acetate) [9045-28-7], Polyamyl (carboxymethyl starch) [9057-06-1], and Sulindex [60938-03-6] strongly oxidized starch, showed a Polyamyl-Sulindex mixt. was the most effective in protecting glass fibers against the adverse effect of abrasion during processing.

L89 ANSWER 67 OF 78 WPIDS (C) 2002 THOMSON DERWENT

ACCESSION NUMBER: 1980-69977C [40] WPIDS

TITLE: Glyoxylic acid and/or deriv. addn. to starch-contg. food - to reduce ageing during agglutination.

DERWENT CLASS: D13 E17

PATENT ASSIGNEE(S): (KLIN-I) KLINGLER R

COUNTRY COUNT: 1

PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
DE 2911475	A	19800925	(198040)*		

PRIORITY APPLN. INFO: DE 1979-2911475 19790321

AB DE 2911475 A UPAB: 19930902

In the prepn. of natural and glutinised starch-contg. foods and other prods., glyoxylic acid and/or its salts and derivs. with other additives is/are added, before or during glutinisation, in sufficient quantity to reduce ageing.

Foods or prods. can contain plant starch, starch fractions, swelling-, converted-, acid-modified- and oxidised starch or other starch derivs. Prod. freshness and quality is maintained. Prods. are stabilised e.g. w.r.t. hot- and cold-viscosity.

L89 ANSWER 68 OF 78 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1979:7924 CAPLUS  
 DOCUMENT NUMBER: 90:7924  
 TITLE: **Coating** compositions for paper  
 INVENTOR(S): Suzuki, Kazuhiko; Fujiki, Yasuhiro; Takada, Akio  
 PATENT ASSIGNEE(S): Kazaki Paper Mfg. Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 53081709	A2	19780719	JP 1976-158004	19761227
JP 55011799	B4	19800327		

AB Heavy CaCO<sub>3</sub> dispersions giving defect-free **coatings** on paper are prepd. by sand-milling under specified conditions of surface area increase. Thus, a 60% aq. dispersion contg. 100 parts heavy CaCO<sub>3</sub> (surface area 1 m<sup>2</sup>/g) and 0.3 part poly(Na acrylate) was sand-ground to surface area 1.9 m<sup>2</sup>/g, mixed (40 parts solids) with 60 parts kaolin, dispersed in water to 65%, mixed with 7 parts **oxidized starch** and 10 parts modified butadiene-styrene copolymer latex, dild. to solids content 55%, and coated on paper.

L89 ANSWER 69 OF 78 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1976:479987 CAPLUS  
 DOCUMENT NUMBER: 85:79987  
 TITLE: Shear-stable **cationic** aqueous copolymer dispersions  
 INVENTOR(S): Reichel, Fritz; Taubitz, Christof  
 PATENT ASSIGNEE(S): BASF A.-G., Ger.  
 SOURCE: Ger. Offen., 15 pp.  
 CODEN: GWXXBX  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 2454397	A1	19760526	DE 1974-2454397	19741116
DE 2454397	C2	19830127		

AB Copolymers prepd. from 70-90% styrene, C1-8 alkyl (meth)acrylate, and optionally acrylonitrile with 10-30% monoethylenically unsatd. monomers having tertiary, protonated tertiary, or quaternary nitrogen atoms and having K value 20-60 are used as **cationic** dispersants or emulsifying agents in the polymn. of (a) C1-8 alkyl acrylates and (or) butadiene, (b) styrene and (or) acrylonitrile and (or) Me methacrylate, and (c) 0-10% (on total monomers) C3-5 .alpha.,.beta.-monoethylenically unsatd. C3-5 mono- and (or) dicarboxylic acids or their water-sol. salts or N-methylol or N-alkoxymethyl derivs. of their amides, for use as paper sizes. Thus, a mixt. of iso-PROH 85, styrene 220, N,N-diethylaminoethyl acrylate 47.5, and 50% isopropanolic tert-Bu perpivalate 15 parts were heated 7 hr at 85.degree., mixed with 20 parts HCO<sub>2</sub>H, and dild. with 1070 parts water, giving a copolymer [56124-44-8] with K value 47. A mixt. of this soln. 659, water 193, and trimethylstearylammmonium chloride 15 parts was heated to 85.degree., mixed with 3 parts 50% aq. H<sub>2</sub>O<sub>2</sub>, mixed with Bu acrylate 95, acrylonitrile 144, and 50% aq. H<sub>2</sub>O<sub>2</sub> 12 parts over 3 hr, and heated 2 hr at 85.degree., giving a fine dispersion

with excellent shear stability. A bleached sulfite pulp test paper was sized with this dispersion, dild. to 0.6% solids and addnl. mixed with 6% **oxidized potato starch**, giving sizing uptake 80% and Cobb value 18 g/m2.

L89 ANSWER 70 OF 78 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1976:76055 CAPLUS

DOCUMENT NUMBER: 84:76055

TITLE: Satin white for paper **coating** materials

INVENTOR(S): Oda, Katsuhiko; Kamioka, Tadashi; Takada, Akira

PATENT ASSIGNEE(S): Kanzaki Paper Mfg. Co., Ltd., Japan

SOURCE: Japan. Kokai, 4 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	JP 50128725	A2	19751011	JP 1974-36339	19740330
AB	Dispersions of satin white (I) [12344-48-8] are sand-milled to give pigments for paper <b>coatings</b> . Thus, a compn. of 25% solids I dispersion 80, poly(Na acrylate) 0.6, and Na tartarate 1 part was sand-milled (1 pass) to give pigment. A 50% solids dispersion of the product passed completely through a 325-mesh screen without shaking, compared with 11% passing for the untreated I. The sand-milled dispersion was compounded with kaolin 80, <b>oxidized starch</b> 7, and SBR latex 7 parts and applied to 60 g/m2 paper with a blade coater to 6 g/m2 without forming streaks.				

L89 ANSWER 71 OF 78 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1974:523349 CAPLUS

DOCUMENT NUMBER: 81:123349

TITLE: Binding and stabilizing agents from starch

INVENTOR(S): Kodet, Josef; Jelinek, Petr

SOURCE: Czech., 2 pp.

CODEN: CZXXA9

DOCUMENT TYPE: Patent

LANGUAGE: Czech

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	CS 152836	B	19740222	CS 1970-8798	19701227
AB	Binding agents for <b>food</b> were prepd. from starch [9005-25-8] degraded partly with H2SO4 or from <b>oxidized starch</b> . Sucrose or glucose was added to the starch compn. The starch compn. had improved soly. and its viscosity could be regulated. <b>H2O2</b> was used in oxidn. of starch.				

L89 ANSWER 72 OF 78 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1974:523343 CAPLUS

DOCUMENT NUMBER: 81:123343

TITLE: Modified starch for electrophoresis

INVENTOR(S): Smid, Josef; Hejtmanek, Vladimir

SOURCE: Czech., 2 pp.

CODEN: CZXXA9

DOCUMENT TYPE: Patent

LANGUAGE: Czech  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
	CS 152160	B	19731219	CS 1971-6343	19710906
AB	Difficulties encountered in the Smithie method for prepn. of modified <b>potato starch</b> [9005-25-8], suitable for electrophoresis involving treatment with HCl in Me <sub>2</sub> CO, e.g. flammability and toxicity, were avoided and the resultant product improved by treatment of the starch with HCl and H <sub>2</sub> O <sub>2</sub> under specific conditions. Thus, treatment of 500 kg <b>potato starch</b> with 0.75 kg 37% HCl and 1 kg 30% H <sub>2</sub> O <sub>2</sub> by mixing in 5 l. water, heating 1 hr to 50.deg., 1 hr to 70.deg., 1 hr to 80.deg., holding 3-4 hr at 80.deg., neutralizing with soda ash, cooling, and filtering, gave a product slightly sol. in cold water, with alk. fluidity 40-45.				

L89 ANSWER 73 OF 78 CAPLUS COPYRIGHT 2002 ACS  
ACCESSION NUMBER: 1972:98242 CAPLUS  
DOCUMENT NUMBER: 76:98242  
TITLE: Coatings for **food** products  
INVENTOR(S): Smid, Josef; Kubicek, Alois; Sobotka, Rudolf  
SOURCE: Czech., 2 pp.  
CODEN: CZXXA9  
DOCUMENT TYPE: Patent  
LANGUAGE: Czech  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
	CS 139686		19710115	CS 1968-5715	19680807
AB	<b>Oxidized starch</b> produces, in combination with dyes and flavoring additives, protective coatings which prevent drying out of <b>foods</b> and improve their appearance. Thus, corn or wheat starch is made acid with 0.1-0.3% HCl, treated with 0.1-0.5% H <sub>2</sub> O <sub>2</sub> , and heated to 90.degree. to give a product which has a viscosity of 15 sec in a 20% aq. soln. It is applied in a 35% soln. at 80.degree. on <b>foods</b> and decreases drying out by 0.5-0.7%.				

L89 ANSWER 74 OF 78 CAPLUS COPYRIGHT 2002 ACS  
ACCESSION NUMBER: 1970:22757 CAPLUS  
DOCUMENT NUMBER: 72:22757  
TITLE: Pigmented **coatings** for paper  
INVENTOR(S): Brailsford, Sidney F.; McDonald, Donald R.  
PATENT ASSIGNEE(S): Reed Paper Group Ltd.  
SOURCE: Ger. Offen., 8 pp.  
CODEN: GWXXBX  
DOCUMENT TYPE: Patent  
LANGUAGE: German  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
	DE 1908923	A	19690918	DE 1969-1908923	19690214
	GB 1227861	A	19710407	GB 1968-7818	19680216
	US 3928055	A	19751223	US 1971-175008	19710825
PRIORITY APPLN. INFO.:				GB 1968-7818	19680216

US 1969-801245 19690219

AB Paper **coatings** were prepd. from aq. suspensions of pigments, binder, and cooked starch. Thus, a suspension was prepd. from a Na polyacrylate (Dispex disperser) 0.12, clay (Lemstar B) (I) 60, oxidized cornstarch 36, and water 40 par ts. This mixt. was then ground using 20-30 mesh sand (Ottawa-Sand) as grinding material, and heated 24-6 min at 95.degree.. The cooked starch mixt. was combined with styrene-butadiene copolymer latex (Uniroyal 2752) and coated onto a base paper at 80 g/m2. A comparison **coating** contg. English china Clay (Dinkie A) (II) was also prepd. (clay used, g/m2 **coating**, 45.degree. reflection, and ml/min Bendtsen gloss given): I, 17.5, 143.5, 17; I, 16.2, 135.5, 20; I, 13.4, 125.7, 21; I, 10.8, 128.2, 20; II, 20, 167.5, 15; II, 16, 152, 19; 19; II, 14.5, 142, 21; II, 12.5, 127, 32. Poly(vinyl alc.), hydroxyethylated cornstarch, crude, **oxidized** or hydroxyethylated potato **starch**, washed chalk, and TiO2 were also claimed for use. This process uses lower quality clays in prepg. paper **coatings** with satisfactory luster. The comps. had good smoothness and body and were useful in the prepn. of lightwt. coated papers.

L89 ANSWER 75 OF 78 CAPLUS COPYRIGHT 2002 ACS  
 ACCESSION NUMBER: 1953:14014 CAPLUS  
 DOCUMENT NUMBER: 47:14014  
 ORIGINAL REFERENCE NO.: 47:2452e-f  
 TITLE: Coated abrasive article  
 INVENTOR(S): Nestor, Leonard R.  
 PATENT ASSIGNEE(S): Minnesota Mining & Manufg. Co.  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Unavailable  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2609284		19520902	US	

AB Coated abrasive articles, such as **sandpaper**, are prepd. by using as a grit binder, **adhesive** comps. made by **oxidizing** raw **starch** or similar materials to a predetd. end point and converting the **oxidized starch** to a viscous fluid by the addn. of an active base. The oxidation is carried out at 80-125.degree.F. with dil. solns. of NaOCl or KMnO4 as oxidizing agents. NaOH is effective in rapidly converting the mixt. of treated starch and water to the viscous **adhesive** state. The modified starch **adhesive** may be filled or compounded with powd. CaCO3 or other inert fillers.

L89 ANSWER 76 OF 78 WPIDS (C) 2002 THOMSON DERWENT  
 ACCESSION NUMBER: 1973-36174U [25] WPIDS  
 TITLE: Powdery sugar contg oxides of starch sugars prodn - for use in instant **foods**.  
 DERWENT CLASS: D13 D17  
 PATENT ASSIGNEE(S): (HAYB) HAYASHIBARA CO  
 COUNTRY COUNT: 1  
 PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
JP 48020314	B		(197325)*		

PRIORITY APPLN. INFO: JP 1969-95842 19691129

AB JP 73020314 B UPAB: 19930831

Method for producing powdery sugar contg. maltobionic acid as the oxides of **starch** sugars, comprises **oxidizing starch** sugars contg. maltose by fermentation, adding org. acid or sweetners such as sugar and acid converted sugar to the obtd. mixt. of sugars and their oxides, and drying the mixt. The powdery sugar is useful as an **additive** for the prodn. of instant **food** such as instant beverages. Starch sugar contg. maltose is obtd. by hydrolyzing a starch such as corn starch, potato starch or amylose starch by the enzyme, consisting of beta-amylase and -1.6-glucosidase. 1.6-Glucosidase is produced by cultivating *Pseudomonas amyloclavata* (ATCC 21262) in a culture medium.

L89 ANSWER 77 OF 78 WPIDS (C) 2002 THOMSON DERWENT

ACCESSION NUMBER: 1972-64614T [40] WPIDS

TITLE: Dehydrating wines - product used as an **additive** for the prodn of medicaments, **foods**, candies etc.

DERWENT CLASS: D16

PATENT ASSIGNEE(S): (SATO-N) SATO SHOKUJIN KOGYO KK

COUNTRY COUNT: 1

PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
JP 47039355	B		(197240)*		

PRIORITY APPLN. INFO: JP 1968-65061 19680910

AB JP 72039355 B UPAB: 19930831

Wine is dehydrated by adding to a wine an aq. soln. of at least a water-soluble processed starch selected from the gp. consisting of (1) dextrin denatured with an enzyme, (2) dextrin hydrolysed with an acid and (3) a paste of an **oxidised starch**, the total amt. of the water-soluble processed starch(es) and solid material in wine relative to water, being is not 70% and then subjecting the obtd. mixt. to spray drying at as low a temperature as possible to remove water.

L89 ANSWER 78 OF 78 WPIDS (C) 2002 THOMSON DERWENT

ACCESSION NUMBER: 1970-90177R [48] WPIDS

TITLE: Starch syrups contg large amts of organic - acids useful as **food additives**.

DERWENT CLASS: D13 D16 D17

PATENT ASSIGNEE(S): (HAYB) HAYASHIBARA CO

COUNTRY COUNT: 10

PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
BE 751525	A		(197048)*		
NL 7008095	A		(197049)		
DE 2028134	A		(197108)		
ZA 7003745	A		(197113)		
FR 2049969	A		(197125)		
CH 525252	A		(197237)		
GB 1320165	A		(197324)		
CA 951666	A	19740723	(197432)		
US 3862005	A	19750121	(197505)		

DE 2028134    B   19780112 (197803)  
JP 55033862   B   19800903 (198039)

PRIORITY APPLN. INFO: JP 1969-39005   19690520; JP 1969-44370  
19690606

AB   BE   751525 A UPAB: 19930831

The mixture of products consisting of oligosaccharides, dextrins and the organic acids, is obtained by subjecting a **starch** hydrolysate, to the **oxidising** action of a glucose-deshydrogenase itself obtained by the action of an acid and/or an enzyme. Thus, a micro-organism producing a glucose-deshydrogenase, e.g. *Pseudomonas graveolens* IFO 3460, may be cultivated on a starch hydrolysate as substrate, or a starch hydrolysate may be subjected to the oxidising action of these micro-organism cells which have been grown separately.

The starch syrups comprise mainly maltobionic and maltotronic acids when using a starch hydrolysate contg. more than 50% maltose as starting material.

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 FILE LAST UPDATED: 11 Jun 2002 (20020611/ED)

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L1	62192	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	HYDROGEN PEROXIDE/CT
L2	1	SEA	FILE=REGISTRY	ABB=ON	PLU=ON	HYDROGEN PEROXIDE/CN
L3	62192	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	L2
L4	62192	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	L1 OR L3
L6	1	SEA	FILE=REGISTRY	ABB=ON	PLU=ON	"COPPER(2+)"/CN
L7	8224	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	L6
L8	359495	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	COPPER+NT,PFT/CT
L9	17694	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	L8 (L) (ION OR (II) OR "2+" OR DIVALENT)
L11	50797	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	STARCH+NT,PFT/CT
L12	1	SEA	FILE=REGISTRY	ABB=ON	PLU=ON	STARCH/CN
L13	49612	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	L12
L14	50797	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	L11 OR L13
L15	3552	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	L14 (L) (PREP OR RACT)/RL
L16	213	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	L15 (L) OXIDI?
L17	30	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	L16 AND L4
L18	25614	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	L9 OR L7
L19	1	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	L17 AND L18

=> D QUE L22

L1	62192	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	HYDROGEN PEROXIDE/CT
L2	1	SEA	FILE=REGISTRY	ABB=ON	PLU=ON	HYDROGEN PEROXIDE/CN
L3	62192	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	L2
L4	62192	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	L1 OR L3
L6	1	SEA	FILE=REGISTRY	ABB=ON	PLU=ON	"COPPER(2+)"/CN
L7	8224	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	L6
L8	359495	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	COPPER+NT,PFT/CT
L9	17694	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	L8 (L) (ION OR (II) OR "2+" OR DIVALENT)
L10	69238	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	OXIDATION CATALYSTS+NT,PFT/CT



L11 50797 SEA FILE=HCAPLUS ABB=ON PLU=ON STARCH+NT, PFT/CT  
 L12 1 SEA FILE=REGISTRY ABB=ON PLU=ON STARCH/CN  
 L13 49612 SEA FILE=HCAPLUS ABB=ON PLU=ON L12  
 L14 50797 SEA FILE=HCAPLUS ABB=ON PLU=ON L11 OR L13  
 L18 25614 SEA FILE=HCAPLUS ABB=ON PLU=ON L9 OR L7  
 L20 347 SEA FILE=HCAPLUS ABB=ON PLU=ON L14 AND L4  
 L21 8 SEA FILE=HCAPLUS ABB=ON PLU=ON L20 AND L18  
 L22 2 SEA FILE=HCAPLUS ABB=ON PLU=ON L21 AND L10

## =&gt; D QUE L27

L1 62192 SEA FILE=HCAPLUS ABB=ON PLU=ON HYDROGEN PEROXIDE/CT  
 L2 1 SEA FILE=REGISTRY ABB=ON PLU=ON HYDROGEN PEROXIDE/CN  
 L3 62192 SEA FILE=HCAPLUS ABB=ON PLU=ON L2  
 L4 62192 SEA FILE=HCAPLUS ABB=ON PLU=ON L1 OR L3  
 L6 1 SEA FILE=REGISTRY ABB=ON PLU=ON "COPPER(2+)" /CN  
 L7 8224 SEA FILE=HCAPLUS ABB=ON PLU=ON L6  
 L8 359495 SEA FILE=HCAPLUS ABB=ON PLU=ON COPPER+NT, PFT/CT  
 L9 17694 SEA FILE=HCAPLUS ABB=ON PLU=ON L8 (L) (ION OR (II) OR "2+"  
 OR DIVALENT)  
 L11 50797 SEA FILE=HCAPLUS ABB=ON PLU=ON STARCH+NT, PFT/CT  
 L12 1 SEA FILE=REGISTRY ABB=ON PLU=ON STARCH/CN  
 L13 49612 SEA FILE=HCAPLUS ABB=ON PLU=ON L12  
 L14 50797 SEA FILE=HCAPLUS ABB=ON PLU=ON L11 OR L13  
 L18 25614 SEA FILE=HCAPLUS ABB=ON PLU=ON L9 OR L7  
 L23 1212 SEA FILE=HCAPLUS ABB=ON PLU=ON L18 (L) CAT/RL  
 L25 4561 SEA FILE=HCAPLUS ABB=ON PLU=ON L4 (L) RACT/RL  
 L26 38 SEA FILE=HCAPLUS ABB=ON PLU=ON L14 AND L25  
 L27 1 SEA FILE=HCAPLUS ABB=ON PLU=ON L26 AND L23

## =&gt; D QUE L28

L1 62192 SEA FILE=HCAPLUS ABB=ON PLU=ON HYDROGEN PEROXIDE/CT  
 L2 1 SEA FILE=REGISTRY ABB=ON PLU=ON HYDROGEN PEROXIDE/CN  
 L3 62192 SEA FILE=HCAPLUS ABB=ON PLU=ON L2  
 L4 62192 SEA FILE=HCAPLUS ABB=ON PLU=ON L1 OR L3  
 L6 1 SEA FILE=REGISTRY ABB=ON PLU=ON "COPPER(2+)" /CN  
 L7 8224 SEA FILE=HCAPLUS ABB=ON PLU=ON L6  
 L8 359495 SEA FILE=HCAPLUS ABB=ON PLU=ON COPPER+NT, PFT/CT  
 L9 17694 SEA FILE=HCAPLUS ABB=ON PLU=ON L8 (L) (ION OR (II) OR "2+"  
 OR DIVALENT)  
 L11 50797 SEA FILE=HCAPLUS ABB=ON PLU=ON STARCH+NT, PFT/CT  
 L12 1 SEA FILE=REGISTRY ABB=ON PLU=ON STARCH/CN  
 L13 49612 SEA FILE=HCAPLUS ABB=ON PLU=ON L12  
 L14 50797 SEA FILE=HCAPLUS ABB=ON PLU=ON L11 OR L13  
 L18 25614 SEA FILE=HCAPLUS ABB=ON PLU=ON L9 OR L7  
 L20 347 SEA FILE=HCAPLUS ABB=ON PLU=ON L14 AND L4  
 L21 8 SEA FILE=HCAPLUS ABB=ON PLU=ON L20 AND L18  
 L28 5 SEA FILE=HCAPLUS ABB=ON PLU=ON L21 NOT (SOY SAUCE OR  
 "CURRANT (RIBES)" OR "FLOURS AND MEALS") /CT

## =&gt; D QUE L40

L1 62192 SEA FILE=HCAPLUS ABB=ON PLU=ON HYDROGEN PEROXIDE/CT  
 L2 1 SEA FILE=REGISTRY ABB=ON PLU=ON HYDROGEN PEROXIDE/CN  
 L3 62192 SEA FILE=HCAPLUS ABB=ON PLU=ON L2  
 L4 62192 SEA FILE=HCAPLUS ABB=ON PLU=ON L1 OR L3  
 L10 69238 SEA FILE=HCAPLUS ABB=ON PLU=ON OXIDATION CATALYSTS+NT, PFT/CT

L11 50797 SEA FILE=HCAPLUS ABB=ON PLU=ON STARCH+NT, PFT/CT  
 L12 1 SEA FILE=REGISTRY ABB=ON PLU=ON STARCH/CN  
 L13 49612 SEA FILE=HCAPLUS ABB=ON PLU=ON L12  
 L14 50797 SEA FILE=HCAPLUS ABB=ON PLU=ON L11 OR L13  
 L30 14405 SEA FILE=HCAPLUS ABB=ON PLU=ON COPPER SULFATE+NT, PFT/CT  
 L31 1 SEA FILE=REGISTRY ABB=ON PLU=ON COPPER SULFATE/CN  
 L32 14405 SEA FILE=HCAPLUS ABB=ON PLU=ON L31  
 L33 14405 SEA FILE=HCAPLUS ABB=ON PLU=ON L30 OR L32  
 L37 1228 SEA FILE=HCAPLUS ABB=ON PLU=ON L33 (L) CAT/RL  
 L38 10 SEA FILE=HCAPLUS ABB=ON PLU=ON L37 AND L14  
 L39 5 SEA FILE=HCAPLUS ABB=ON PLU=ON L38 AND L4  
 L40 4 SEA FILE=HCAPLUS ABB=ON PLU=ON L39 AND L10

## =&gt; D QUE L46

L1 62192 SEA FILE=HCAPLUS ABB=ON PLU=ON HYDROGEN PEROXIDE/CT  
 L2 1 SEA FILE=REGISTRY ABB=ON PLU=ON HYDROGEN PEROXIDE/CN  
 L3 62192 SEA FILE=HCAPLUS ABB=ON PLU=ON L2  
 L4 62192 SEA FILE=HCAPLUS ABB=ON PLU=ON L1 OR L3  
 L8 359495 SEA FILE=HCAPLUS ABB=ON PLU=ON COPPER+NT, PFT/CT  
 L11 50797 SEA FILE=HCAPLUS ABB=ON PLU=ON STARCH+NT, PFT/CT  
 L12 1 SEA FILE=REGISTRY ABB=ON PLU=ON STARCH/CN  
 L13 49612 SEA FILE=HCAPLUS ABB=ON PLU=ON L12  
 L14 50797 SEA FILE=HCAPLUS ABB=ON PLU=ON L11 OR L13  
 L43 6725 SEA FILE=HCAPLUS ABB=ON PLU=ON L8 (L) (CHLORIDE OR PHOSPHATE  
 OR NITRATE OR ACETATE OR BROMIDE)  
 L44 442 SEA FILE=HCAPLUS ABB=ON PLU=ON L43 (L) CAT/RL  
 L45 8 SEA FILE=HCAPLUS ABB=ON PLU=ON L44 AND L4  
 L46 0 SEA FILE=HCAPLUS ABB=ON PLU=ON L45 AND L14

## =&gt; D QUE L50

L1 62192 SEA FILE=HCAPLUS ABB=ON PLU=ON HYDROGEN PEROXIDE/CT  
 L2 1 SEA FILE=REGISTRY ABB=ON PLU=ON HYDROGEN PEROXIDE/CN  
 L3 62192 SEA FILE=HCAPLUS ABB=ON PLU=ON L2  
 L4 62192 SEA FILE=HCAPLUS ABB=ON PLU=ON L1 OR L3  
 L11 50797 SEA FILE=HCAPLUS ABB=ON PLU=ON STARCH+NT, PFT/CT  
 L12 1 SEA FILE=REGISTRY ABB=ON PLU=ON STARCH/CN  
 L13 49612 SEA FILE=HCAPLUS ABB=ON PLU=ON L12  
 L14 50797 SEA FILE=HCAPLUS ABB=ON PLU=ON L11 OR L13  
 L47 16736 SEA FILE=HCAPLUS ABB=ON PLU=ON (CUPRIC ACETATE+PFT OR CUPRIC  
 BROMIDE+PFT OR CUPRIC CHLORIDE+PFT OR CUPRIC NITRATE+PFT)/CT  
 L48 4236 SEA FILE=HCAPLUS ABB=ON PLU=ON L47 (L) CAT/RL  
 L49 73 SEA FILE=HCAPLUS ABB=ON PLU=ON L48 AND L4  
 L50 1 SEA FILE=HCAPLUS ABB=ON PLU=ON L49 AND L14

## =&gt; D QUE L55

L1 62192 SEA FILE=HCAPLUS ABB=ON PLU=ON HYDROGEN PEROXIDE/CT  
 L2 1 SEA FILE=REGISTRY ABB=ON PLU=ON HYDROGEN PEROXIDE/CN  
 L3 62192 SEA FILE=HCAPLUS ABB=ON PLU=ON L2  
 L4 62192 SEA FILE=HCAPLUS ABB=ON PLU=ON L1 OR L3  
 L11 50797 SEA FILE=HCAPLUS ABB=ON PLU=ON STARCH+NT, PFT/CT  
 L12 1 SEA FILE=REGISTRY ABB=ON PLU=ON STARCH/CN  
 L13 49612 SEA FILE=HCAPLUS ABB=ON PLU=ON L12  
 L14 50797 SEA FILE=HCAPLUS ABB=ON PLU=ON L11 OR L13  
 L51 5 SEA FILE=REGISTRY ABB=ON PLU=ON (CUPRIC ACETATE OR CUPRIC  
 BROMIDE OR CUPRIC CHLORIDE OR CUPRIC NITRATE OR CUPRIC  
 PHOSPHATE)/CN  
 L52 16917 SEA FILE=HCAPLUS ABB=ON PLU=ON L51

L53 4268 SEA FILE=HCAPLUS ABB=ON PLU=ON L52 (L) CAT/RL  
L54 73 SEA FILE=HCAPLUS ABB=ON PLU=ON L53 AND L4  
L55 1 SEA FILE=HCAPLUS ABB=ON PLU=ON L54 AND L14

=> S L19 OR L22 OR L27 OR L28 OR L40 OR L50 OR L55  
L130 8 L19 OR L22 OR L27 OR L28 OR L40 OR L50 OR L55

=> FILE BIOSIS  
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FILE COVERS 1969 TO DATE.  
CAS REGISTRY NUMBERS AND CHEMICAL NAMES (CNs) PRESENT  
FROM JANUARY 1969 TO DATE.

RECORDS LAST ADDED: 5 June 2002 (20020605/ED)

=> D QUE L61  
L56 33814 SEA FILE=BIOSIS ABB=ON PLU=ON H2O2 OR HYDROGENPEROXIDE OR  
HYDROGEN PEROXIDE OR HYDROGEN PER OXIDE  
L57 9421 SEA FILE=BIOSIS ABB=ON PLU=ON COPPER (3A) (ION? OR CATION?  
OR DIVALENT OR (II) OR "2+")  
L59 41167 SEA FILE=BIOSIS ABB=ON PLU=ON STARCH  
L60 107 SEA FILE=BIOSIS ABB=ON PLU=ON L59 (3A) OXIDI?  
L61 0 SEA FILE=BIOSIS ABB=ON PLU=ON L56 AND L57 AND L60

=> D QUE L62  
L56 33814 SEA FILE=BIOSIS ABB=ON PLU=ON H2O2 OR HYDROGENPEROXIDE OR  
HYDROGEN PEROXIDE OR HYDROGEN PER OXIDE  
L59 41167 SEA FILE=BIOSIS ABB=ON PLU=ON STARCH  
L60 107 SEA FILE=BIOSIS ABB=ON PLU=ON L59 (3A) OXIDI?  
L62 1 SEA FILE=BIOSIS ABB=ON PLU=ON (COPPER OR CUPRIC) AND L56 AND  
L60

=> D QUE L64  
L56 33814 SEA FILE=BIOSIS ABB=ON PLU=ON H2O2 OR HYDROGENPEROXIDE OR  
HYDROGEN PEROXIDE OR HYDROGEN PER OXIDE  
L59 41167 SEA FILE=BIOSIS ABB=ON PLU=ON STARCH  
L63 2 SEA FILE=BIOSIS ABB=ON PLU=ON (COPPER OR CUPRIC) AND L56 AND  
L59  
L64 1 SEA FILE=BIOSIS ABB=ON PLU=ON L63 NOT COPPER ZINC-SUPEROXIDE  
DISMUTASE

=> S L61 OR L64  
L131 1 L61 OR L64

=> FILE AGRICOLA  
FILE 'AGRICOLA' ENTERED AT 16:27:53 ON 12 JUN 2002

FILE COVERS 1970 TO 12 Jun 2002 (20020612/ED)

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This file contains CAS Registry Numbers for easy and accurate substance identification.

=> D QUE L69

L65	6370	SEA FILE=AGRICOLA	ABB=ON	PLU=ON	STARCH+NT,PFT/CT
L66	1813	SEA FILE=AGRICOLA	ABB=ON	PLU=ON	HYDROGEN PEROXIDE/CT
L67	5756	SEA FILE=AGRICOLA	ABB=ON	PLU=ON	COPPER+PFT/CT
L68	1	SEA FILE=AGRICOLA	ABB=ON	PLU=ON	L65 AND L66 AND L67
L69	0	SEA FILE=AGRICOLA	ABB=ON	PLU=ON	L68 NOT SUPEROXIDE DISMUTASE/ CT

=> FILE CABA

FILE 'CABA' ENTERED AT 16:28:10 ON 12 JUN 2002  
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FILE COVERS 1973 TO 7 Jun 2002 (20020607/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> D QUE L75

L70	32214	SEA FILE=CABA	ABB=ON	PLU=ON	STARCH
L71	46975	SEA FILE=CABA	ABB=ON	PLU=ON	COPPER OR CUPRIC OR CU
L72	7278	SEA FILE=CABA	ABB=ON	PLU=ON	H2O2 OR HYDROGENPEROXIDE OR HYDROGEN PEROXIDE OR HYDROGEN PER OXIDE
L74	35	SEA FILE=CABA	ABB=ON	PLU=ON	L70 (3A) OXIDI?
L75	0	SEA FILE=CABA	ABB=ON	PLU=ON	L71 AND L72 AND L74

=> FILE JICST

FILE 'JICST-EPLUS' ENTERED AT 16:28:27 ON 12 JUN 2002  
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FILE COVERS 1985 TO 11 JUN 2002 (20020611/ED)

THE JICST-EPLUS FILE HAS BEEN RELOADED TO REFLECT THE 1999 CONTROLLED TERM (/CT) THESAURUS RELOAD.

=> D QUE L81

L76	17195	SEA FILE=JICST-EPLUS	ABB=ON	PLU=ON	STARCH
L77	62972	SEA FILE=JICST-EPLUS	ABB=ON	PLU=ON	COPPER OR CUPRIC OR CU
L78	6750	SEA FILE=JICST-EPLUS	ABB=ON	PLU=ON	H2O2 OR HYDROGENPEROXIDE OR HYDROGEN PEROXIDE OR HYDROGEN PER OXIDE
L80	70	SEA FILE=JICST-EPLUS	ABB=ON	PLU=ON	L76 (3A) OXIDI?
L81	0	SEA FILE=JICST-EPLUS	ABB=ON	PLU=ON	L77 AND L78 AND L80

=> FILE PAPERCHEM

FILE 'PAPERCHEM2' ENTERED AT 16:28:44 ON 12 JUN 2002  
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FILE COVERS 1967 TO 10 Jun 2002 (20020610/ED)

=> D QUE L87

L82	8845	SEA FILE=PAPERCHEM2	ABB=ON	PLU=ON	STARCH
L83	8597	SEA FILE=PAPERCHEM2	ABB=ON	PLU=ON	COPPER OR CUPRIC OR CU

L84 4376 SEA FILE=PAPERCHEM2 ABB=ON PLU=ON H2O2 OR HYDROGENPEROXIDE  
OR HYDROGEN PEROXIDE OR HYDROGEN PER OXIDE  
L86 865 SEA FILE=PAPERCHEM2 ABB=ON PLU=ON L82 (3A) OXIDI?  
L87 0 SEA FILE=PAPERCHEM2 ABB=ON PLU=ON L83 AND L84 AND L86

=> FILE TEXTILETECH

FILE 'TEXTILETECH' ENTERED AT 16:29:02 ON 12 JUN 2002  
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FILE LAST UPDATED: 05 JUN 2002 <20020605/UP>  
FILE COVERS 1978 TO DATE.

=> D QUE L93

L88 914 SEA FILE=TEXTILETECH ABB=ON PLU=ON STARCH  
L89 1208 SEA FILE=TEXTILETECH ABB=ON PLU=ON COPPER OR CUPRIC OR CU  
L90 1023 SEA FILE=TEXTILETECH ABB=ON PLU=ON H2O2 OR HYDROGENPEROXIDE  
OR HYDROGEN PEROXIDE OR HYDROGEN PER OXIDE  
L92 14 SEA FILE=TEXTILETECH ABB=ON PLU=ON L88 (3A) OXIDI?  
L93 0 SEA FILE=TEXTILETECH ABB=ON PLU=ON L89 AND L90 AND L92

=> FILE FROST FSTA

FILE 'FROSTI' ENTERED AT 16:29:24 ON 12 JUN 2002  
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=> D QUE L97

L70 32214 SEA FILE=CABA ABB=ON PLU=ON STARCH  
L71 46975 SEA FILE=CABA ABB=ON PLU=ON COPPER OR CUPRIC OR CU  
L72 7278 SEA FILE=CABA ABB=ON PLU=ON H2O2 OR HYDROGENPEROXIDE OR  
HYDROGEN PEROXIDE OR HYDROGEN PER OXIDE  
L94 42347 SEA L70  
L95 13462 SEA L71  
L96 2918 SEA L72  
L97 4 SEA L94 AND L95 AND L96

=> FILE WPIDS

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FILE LAST UPDATED: 10 JUN 2002 <20020610/UP>  
MOST RECENT DERWENT UPDATE 200236 <200236/DW>  
DERWENT WORLD PATENTS INDEX SUBSCRIBER FILE, COVERS 1963 TO DATE

>>> The BATCH option for structure searches has been  
enabled in WPINDEX/WPIDS and WPIX >>>

>>> PATENT IMAGES AVAILABLE FOR PRINT AND DISPLAY >>>

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SEE <http://www.derwent.com/dwpi/updates/dwpicov/index.html> <<<

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GUIDES, PLEASE VISIT:  
[http://www.derwent.com/userguides/dwpi\\_guide.html](http://www.derwent.com/userguides/dwpi_guide.html) <<<

=> D QUE L103

L70 32214 SEA FILE=CABA ABB=ON PLU=ON STARCH  
L99 202250 SEA FILE=WPIDS ABB=ON PLU=ON COPPER OR CUPRIC OR CU  
L100 25710 SEA FILE=WPIDS ABB=ON PLU=ON H2O2 OR HYDROGENPEROXIDE OR  
HYDROGEN PEROXIDE OR HYDROGEN PER OXIDE  
L102 612 SEA FILE=WPIDS ABB=ON PLU=ON L70 (3A) OXIDI?  
L103 2 SEA FILE=WPIDS ABB=ON PLU=ON L99 AND L100 AND L102

=> D QUE L105

L70 32214 SEA FILE=CABA ABB=ON PLU=ON STARCH  
L99 202250 SEA FILE=WPIDS ABB=ON PLU=ON COPPER OR CUPRIC OR CU  
L100 25710 SEA FILE=WPIDS ABB=ON PLU=ON H2O2 OR HYDROGENPEROXIDE OR  
HYDROGEN PEROXIDE OR HYDROGEN PER OXIDE  
L104 8932 SEA FILE=WPIDS ABB=ON PLU=ON L99 (5A) CATAL?  
L105 3 SEA FILE=WPIDS ABB=ON PLU=ON L70 AND L100 AND L104

=> D QUE L108

L70 32214 SEA FILE=CABA ABB=ON PLU=ON STARCH  
L99 202250 SEA FILE=WPIDS ABB=ON PLU=ON COPPER OR CUPRIC OR CU  
L100 25710 SEA FILE=WPIDS ABB=ON PLU=ON H2O2 OR HYDROGENPEROXIDE OR  
HYDROGEN PEROXIDE OR HYDROGEN PER OXIDE  
L106 24692 SEA FILE=WPIDS ABB=ON PLU=ON L99 (3A) (ION? OR CATION? OR  
DIVALENT OR (II) OR "2+")  
L107 7 SEA FILE=WPIDS ABB=ON PLU=ON L70 AND L100 AND L106  
L108 3 SEA FILE=WPIDS ABB=ON PLU=ON L107 AND STARCH/TI

=> D QUE L111

L98 38445 SEA FILE=WPIDS ABB=ON PLU=ON STARCH  
L99 202250 SEA FILE=WPIDS ABB=ON PLU=ON COPPER OR CUPRIC OR CU  
L100 25710 SEA FILE=WPIDS ABB=ON PLU=ON H2O2 OR HYDROGENPEROXIDE OR  
HYDROGEN PEROXIDE OR HYDROGEN PER OXIDE  
L101 17 SEA FILE=WPIDS ABB=ON PLU=ON L98 AND L99 AND L100  
L109 81463 SEA FILE=WPIDS ABB=ON PLU=ON OXID? AND CATAL?  
L110 5 SEA FILE=WPIDS ABB=ON PLU=ON L101 AND L109  
L111 4 SEA FILE=WPIDS ABB=ON PLU=ON L110 AND STARCH/TI

=> S L103 OR L105 OR L108 OR L111

L132 6 L103 OR L105 OR L108 OR L111

=> FILE COPPERLIT

FILE 'COPPERLIT' ENTERED AT 16:31:35 ON 12 JUN 2002

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FILE LAST UPDATED: 11 APR 2002 <20020411/UP>

FILE COVERS 1965 TO DATE

>>> Simultaneous left and right truncation available in  
the Basic Index <<<

=> D QUE L119

L112 16 SEA FILE=COPPERLIT ABB=ON PLU=ON STARCH  
L119 0 SEA FILE=COPPERLIT ABB=ON PLU=ON L112 AND OXIDI?

=> FILE MEDLINE

FILE 'MEDLINE' ENTERED AT 16:31:53 ON 12 JUN 2002

FILE LAST UPDATED: 11 JUN 2002 (20020611/UP). FILE COVERS 1958 TO DATE.

On June 9, 2002, MEDLINE was reloaded. See HELP RLOAD for details.

MEDLINE thesauri in the /CN, /CT, and /MN fields incorporate the MeSH 2002 vocabulary. Enter HELP THESAURUS for details.

THIS FILE CONTAINS CAS REGISTRY NUMBERS FOR EASY AND ACCURATE SUBSTANCE IDENTIFICATION.

=> D QUE L125

L120	14807	SEA	FILE=MEDLINE	ABB=ON	PLU=ON	STARCH+NT,PFT/CT
L122	26488	SEA	FILE=MEDLINE	ABB=ON	PLU=ON	COPPER/CT
L123	17199	SEA	FILE=MEDLINE	ABB=ON	PLU=ON	HYDROGEN PEROXIDE/CT
L124	74	SEA	FILE=MEDLINE	ABB=ON	PLU=ON	L120 AND L122
L125	0	SEA	FILE=MEDLINE	ABB=ON	PLU=ON	L124 AND L123

=> D QUE L127

L120	14807	SEA	FILE=MEDLINE	ABB=ON	PLU=ON	STARCH+NT,PFT/CT
L123	17199	SEA	FILE=MEDLINE	ABB=ON	PLU=ON	HYDROGEN PEROXIDE/CT
L126	4278	SEA	FILE=MEDLINE	ABB=ON	PLU=ON	COPPER (3A) (ION? OR CATION? OR DIVALENT OR II OR "2+")
L127	0	SEA	FILE=MEDLINE	ABB=ON	PLU=ON	L120 AND L123 AND L126

=> D QUE L129

L120	14807	SEA	FILE=MEDLINE	ABB=ON	PLU=ON	STARCH+NT,PFT/CT
L123	17199	SEA	FILE=MEDLINE	ABB=ON	PLU=ON	HYDROGEN PEROXIDE/CT
L128	1335	SEA	FILE=MEDLINE	ABB=ON	PLU=ON	CUPRIC
L129	0	SEA	FILE=MEDLINE	ABB=ON	PLU=ON	L120 AND L123 AND L128

=> DUP REM L97 L131 L130 L132

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PROCESSING COMPLETED FOR L97

PROCESSING COMPLETED FOR L131

PROCESSING COMPLETED FOR L130

PROCESSING COMPLETED FOR L132

L133 16 DUP REM L97 L131 L130 L132 (3 DUPLICATES REMOVED)

=&gt; D IBIB AB 1-16

L133 ANSWER 1 OF 16 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2001:174097 HCAPLUS

DOCUMENT NUMBER: 134:209580

TITLE: Oxidized starch derivatives and their manufacture by acidic roasting

INVENTOR(S): Hinako, Toshio; Ishida, Mitsuo

PATENT ASSIGNEE(S): Oji Corn Starch Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001064302	A2	20010313	JP 1999-239930	19990826

AB The starch derivs. are manufd. by roasting mixts. (water content .ltoreq.30%) of starch, H2O2, and metal catalysts under acidic conditions. Thus, a mixt. (H2O content .ltoreq.12%) contg. corn starch, H2O2, H2SO4, and CuSO4 was roasted at 80.degree. for 60 min to give a starch deriv. showing aldehyde content 0.07%, reduced carboxyl content, and good storage stability and water insoly.

L133 ANSWER 2 OF 16 WPIDS (C) 2002 THOMSON DERWENT

ACCESSION NUMBER: 2001-267107 [28] WPIDS

DOC. NO. CPI: C2001-081074

TITLE: **Oxidation** of di- or poly-saccharide in aqueous solution or slurry, e.g. for production of **oxidized starch**, involves reaction with **hydrogen peroxide** activated on a heterogeneous **catalyst** in the reaction mixture.

DERWENT CLASS: D25 E13 F09

INVENTOR(S): RAPTHEL, I

PATENT ASSIGNEE(S): (MOLK-N) MOL KATALYSATORTECHNIK GMBH

COUNTRY COUNT: 1

PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
DE 19960950	A1	20010301	(200128)*		4
DE 19960950	C2	20010823	(200148)		

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
DE 19960950	A1	DE 1999-19960950	19991217
DE 19960950	C2	DE 1999-19960950	19991217

PRIORITY APPLN. INFO: DE 1999-19939927 19990823

AB DE 19960950 A UPAB: 20010522

NOVELTY - Process for the **oxidation** of disaccharides in aqueous solution or slurry, in which the **oxidizing agent** used is **hydrogen peroxide** activated on a heterogeneous **catalyst** in the reaction solution with the formation of hydroxyl



(OH) radicals.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for a similar process for the **oxidation** of polysaccharides.

USE - The use of specified **catalysts** for the **oxidation** of di- or poly-saccharides in aqueous solution or slurry with an **oxidizing** agent, especially **hydrogen peroxide**, is claimed. The products (with carboxyl groups etc.) are used e.g. in the paper industry and as co-builders instead of phosphates in detergents.

ADVANTAGE - An economical, chlorine-free process for the **oxidation** of di- or poly-saccharides with good space-time yields and no interfering by-products. The process can be operated so that the **hydrogen peroxide** is completely consumed, but any unreacted peroxide can also easily be removed.

Dwg.0/0

L133 ANSWER 3 OF 16 HCAPLUS COPYRIGHT 2002 ACS DUPLICATE 1  
 ACCESSION NUMBER: 2000:191115 HCAPLUS  
 DOCUMENT NUMBER: 132:224042  
 TITLE: Hydrogen peroxide oxidation of starch  
 INVENTOR(S): Kesselmans, Ronald Peter Wilhelmus; Bleeker, Ido Pieter  
 PATENT ASSIGNEE(S): Cooperatieve Verkoop- En Productievereniging Van Aardappelmeel En Derivatens, Neth.  
 SOURCE: PCT Int. Appl., 23 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000015670	A1	20000323	WO 1999-NL568	19990913
W:				
AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW:				
GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
AU 9956562	A1	20000403	AU 1999-56562	19990913
BR 9913581	A	20010522	BR 1999-13581	19990913
EP 1112287	A1	20010704	EP 1999-943485	19990913
R:				
AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				

PRIORITY APPLN. INFO.: EP 1998-203043 A 19980911  
 WO 1999-NL568 W 19990913

AB A root or tuber starch, comprising .gtoreq.95% (based on dry starch) of amylopectin, or a deriv. of such starch is treated with H2O2 in the presence of Cu2+ ion catalyst. Under the process condition cereal and fruit starches are not degraded to a sufficient extent to obtained a product having desired characteristics. The use of oxidized starch as binder in paper coatings, in surface sizes and adhesives, as food additive and emulsifier for paper sizing agents is claimed.

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

## L133 ANSWER 4 OF 16 FROSTI COPYRIGHT 2002 LFRA

ACCESSION NUMBER: 559653 FROSTI  
TITLE: Oxidation of **starch**.  
INVENTOR: Kesselmans R.P.W.; Bleeker I.P.  
PATENT ASSIGNEE: Avebe Corp. Verkoop.Prod.  
SOURCE: European Patent Application  
PATENT INFORMATION: EP 1112287 A1 20000323  
APPLICATION INFORMATION: 19990913  
PRIORITY INFORMATION: European Patent Office 19980911  
NOTE: 20000323  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
SUMMARY LANGUAGE: English

AB A process is given for the oxidation of **starch** to reduce its viscosity in solution or dispersion. A root or tuber **starch**, comprising at least 95% by weight amylopectin **starch** or derivatives, is treated with **hydrogen peroxide** in the presence of divalent **copper** ions as catalyst. A high reaction rate is achieved and a **starch** of high stability is obtained.

## L133 ANSWER 5 OF 16 FROSTI COPYRIGHT 2002 LFRA

ACCESSION NUMBER: 523374 FROSTI  
TITLE: Oxidation of **starch**.  
INVENTOR: Kesselmans R.P.W.; Bleeker I.P.  
PATENT ASSIGNEE: Avebe Corp. Verkoop Prod.  
SOURCE: PCT Patent Application  
PATENT INFORMATION: WO 2000015670 A1 20000323  
APPLICATION INFORMATION: 19990913  
PRIORITY INFORMATION: European Patent Office 19980911  
NOTE: 20000323  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
SUMMARY LANGUAGE: English

AB A process is given for the oxidation of **starch** to reduce its viscosity in solution or dispersion. A root or tuber **starch**, comprising at least 95% by weight amylopectin **starch** or derivatives, is treated with **hydrogen peroxide** in the presence of divalent **copper** ions as catalyst. A high reaction rate is achieved and a **starch** of high stability is obtained.

## L133 ANSWER 6 OF 16 HCAPLUS COPYRIGHT 2002 ACS

DUPLICATE 2

ACCESSION NUMBER: 1999:194186 HCAPLUS  
DOCUMENT NUMBER: 130:239098  
TITLE: Manufacture of stable, chlorine-free modified starch  
INVENTOR(S): Ketola, Hannu; Hagberg, Peggy  
PATENT ASSIGNEE(S): Raisio Chemicals Oy, Finland  
SOURCE: PCT Int. Appl., 23 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9912977	A1	19990318	WO 1998-FI684	19980902
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT,				

UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM  
 RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES,  
 FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI,  
 CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

FI 9703651 A 19990311 FI 1997-3651 19970910  
 CA 2302567 AA 19990318 CA 1998-2302567 19980902  
 AU 9890737 A1 19990329 AU 1998-90737 19980902  
 EP 1015497 A1 20000705 EP 1998-942702 19980902

R: AT, BE, CH, DE, DK, ES, FR, GB, IT, LI, NL, SE, PT, SI, FI

PRIORITY APPLN. INFO.: FI 1997-3651 A 19970910  
 WO 1998-FI684 W 19980902

AB A title starch, useful as binder in paper coating pastes and for surface sizing of paper, is manufd. by degrading the starting material, e.g., potato starch by oxidn. with H<sub>2</sub>O<sub>2</sub> in the presence of Cu catalyst, and stabilizing the oxidized starch by acetylation combined with crosslinking. A typical title starch was manufd. by oxidizing potato starch with H<sub>2</sub>O<sub>2</sub> in aq. suspension at 40.degree. and pH 10 in the presence of 0.015% CuSO<sub>4</sub>, and acetylating with simultaneous crosslinking the product by reacting for 2 h at pH 8-9 with Ac<sub>2</sub>O contg. 0.15% adipic acid.

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L133 ANSWER 7 OF 16 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1997:490992 HCAPLUS

DOCUMENT NUMBER: 127:163408

TITLE: Oxidation of starch by peroxides in aqueous media

INVENTOR(S): Jinho, Masafumi; Sumitani, Makoto

PATENT ASSIGNEE(S): Mitsubishi Gas Chemical Co., Inc., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 3 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 09188704	A2	19970722	JP 1996-2297	19960110

AB Aq. media contg. starch are changed into a size, i.e., a high-viscosity mixt., by heating at a temp. higher than the temp. (T) at which a rapid viscosity increase sets in, then cooling at a temp. lower than T, and treating with peroxides in the presence of catalysts to give carboxy-contg. starch applicable, e.g., as scale inhibitors, pigment dispersants, or detergent builders showing redn. of corrosion of the containers caused by the peroxides. Thus, 10.0 g (dry) corn starch was suspended in 178 mL H<sub>2</sub>O, mixed with 50 mg CuSO<sub>4</sub>·5H<sub>2</sub>O, stirred at 72.degree. for 10 min, heated at 80.degree. for 21 min, cooled to 45.degree. for 25 min, treated with 12.3 g 35% H<sub>2</sub>O<sub>2</sub> for 2.5 h, mixed with aq. NaOH to control pH at 8.5-9, subjected to removal of the catalyst, and mixed with EtOH to ppt. the product, which was freeze-dried to give a title material.

L133 ANSWER 8 OF 16 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1998:125820 HCAPLUS

DOCUMENT NUMBER: 128:155757

TITLE: Effect of oxidizing agents on quality of corn starch adhesive

AUTHOR(S): Zhai, Guangyu

CORPORATE SOURCE: The Medical School Affiliated to Henan Medical University, Zhengzhou, 450052, Peop. Rep. China

SOURCE: Huaxue Yu Nianhe (1997), (4), 237-239  
CODEN: HYZHEN; ISSN: 1001-0017  
PUBLISHER: Huaxue Yu Nianhe Bianjibu  
DOCUMENT TYPE: Journal  
LANGUAGE: Chinese  
AB Effects of pH, temp., and catalyst on oxidn. of corn starch with KMnO<sub>4</sub>, H<sub>2</sub>O<sub>2</sub>, and NaClO and the storage life of the corn starch adhesive were studied. The oxidizing ability of the oxidizing agents was enhanced with increasing temp. for all the 3 oxidizing agents, and with decreasing pH for KMnO<sub>4</sub> and H<sub>2</sub>O<sub>2</sub>, but with increasing pH for NaClO. The storage stability was the best when H<sub>2</sub>O<sub>2</sub> was used.

L133 ANSWER 9 OF 16 FROSTI COPYRIGHT 2002 LFRA  
ACCESSION NUMBER: 447998 FROSTI  
TITLE: Water soluble oxidized **starches** by peroxide reactive extrusion.  
AUTHOR: Wing R.E.; Willett J.L.  
SOURCE: Industrial Crops and Products, 1997, (October), 7 (1), 45-52 (24 ref.)  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
SUMMARY LANGUAGE: English  
AB Reactive extrusion of **starch** has been used successfully to yield products with improved reaction efficiency and solubility. In this study, oxidized **starches** were prepared via reactive extrusion. Oxidation of **starches** with different amylose content to increase water solubility was examined. Three types of corn **starches** containing up to 70% amylose were oxidized by a reactive extrusion using **hydrogen peroxide** and a ferrous-cupric sulfate catalyst. Drum drying allowed rapid recovery of product. Increasing the peroxide level was found to increase oxidation and solubility. **Starches** with higher amylose content gave reduced solubility, but higher carboxyl content than those with low amylose content. Soluble products had solution viscosities comparable to maltodextrins of dextrose equivalent 5-10.

L133 ANSWER 10 OF 16 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.DUPLICATE  
3  
ACCESSION NUMBER: 1995:106705 BIOSIS  
DOCUMENT NUMBER: PREV199598121005  
TITLE: Oxidation of potato **starch** by **hydrogen peroxide**.  
AUTHOR(S): Parovuori, Petteri (1); Hamunen, Antti; Forssell, Pirkko (1); Autio, Karin (1); Poutanen, Kaisa  
CORPORATE SOURCE: (1) VTT Biotechnol. Food Res., PO Box 1500, 02044 VTT, Espoo Finland  
SOURCE: Starch, (1995) Vol. 47, No. 1, pp. 19-23.  
ISSN: 0038-9056.  
DOCUMENT TYPE: Article  
LANGUAGE: English  
SUMMARY LANGUAGE: English; German

AB Potato **starch** was oxidized by **hydrogen peroxide** in alkaline and acidic reaction conditions with **copper**, iron and tungstate catalysts in order to introduce carboxyl and carbonyl groups to the **starch** molecule. Carbonyl contents up to 6.6 per 100 glucose units could be obtained, whereas carboxyl content remained low (up to 1.4). **Starch** yields in the alkaline and acidic reactions were 90 and 99%, respectively. The molecular weight decreased markedly with the degree of oxidation, and was dependent on the catalyst used. Rheological measurements revealed that when the

molecular weight of the moderately oxidized **starch** was high, a very firm gel ( $G' = 40\text{kPa}$ ) was obtained with 25% **starch** concentration. When the degree of oxidation increased, the storage modulus  $G'$  decreased. The more the oxidized **starch** contained carbonyl groups, the higher was the gelatinization temperature.

L133 ANSWER 11 OF 16 FSTA COPYRIGHT 2002 IFIS

ACCESSION NUMBER: 1995(05):L0016 FSTA

TITLE: Oxidation of potato **starch** by **hydrogen peroxide**.

AUTHOR: Parovuori, P.; Hamunen, A.; Forssell, P.; Autio, K.; Poutanen, K.

CORPORATE SOURCE: VTT Biotech. & Food Res., PO Box 1500, 02044 VTT, Espoo, Finland

SOURCE: Starch/Staerke, (1995) 47 (1) 19-23, 21 ref.  
ISSN: 0038-9056

DOCUMENT TYPE: Journal

LANGUAGE: English

AB ~ Potato **starch** was oxidized by **hydrogen**

**peroxide** in alkaline and acidic reaction conditions with **copper**, iron, and tungstate catalysts in order to introduce carboxyl and carbonyl groups to the **starch** molecule. Carbonyl contents up to 6.6 per 100 glucose units could be obtained, whereas carboxyl content remained low (up to 1.4). **Starch** yields in the alkaline and acidic reactions were 90 and 99%, respectively. The mol. wt. decreased markedly with the degree of oxidation and was dependent on the catalyst used. Rheological measurements revealed that when the mol. wt. of moderately oxidized **starch** was high, a very firm gel ( $G' = 40\text{kPa}$ ) was obtained with 25% **starch** concn. When the degree of oxidation increased, the storage modulus  $G'$  decreased. The gelatinization temp. increased with increasing numbers of carbonyl groups in the oxidized **starch**.

L133 ANSWER 12 OF 16 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1985:454387 HCAPLUS

DOCUMENT NUMBER: 103:54387

TITLE: Effects of iron, copper, and chromate ions on the oxidative degradation of cellulose model compounds

AUTHOR(S): Blattner, Regine; Ferrier, Robert J.

CORPORATE SOURCE: Dep. Chem., Victoria Univ., Wellington, N. Z.

SOURCE: Carbohydr. Res. (1985), 138(1), 73-82

CODEN: CRBRAT; ISSN: 0008-6215

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Fe(II) and Fe(III) ions promote the degrdn. of the cellulose model 1,5-anhydrocellobiitol by oxygen or  $\text{H}_2\text{O}_2$ ; Cu and chromate ions have marked and different effects on the Fe catalysis. With **starch**, Fe promotes the  $\text{H}_2\text{O}_2$ -induced reaction and Cu and chromate ions further enhance the reaction rate. The tensile strength of paperboard is reduced by the action of  $\text{H}_2\text{O}_2$  and Fe(II) salts, and mixts. of Cu, chromate, and arsenate salts (CCA, a timber preservative) also promoted degrdn. in the presence or absence of Fe ions. The oxidn. of 1,5-anhydrocellobiitol by oxygen in the presence of Fe ions is strongly inhibited by CCA and by cetyltrimethylammonium chloride, and is accelerated by phenols and related compds.

L133 ANSWER 13 OF 16 WPIDS (C) 2002 THOMSON DERWENT

ACCESSION NUMBER: 1982-28997E [15] WPIDS

TITLE: High dry material content **starch** glue - prepd. by stein-hall method with decomposition of gelatinised

**starch** using a water-soluble **oxidant**,  
 esp. sodium perborate.  
 DERWENT CLASS: G03  
 INVENTOR(S): VISSER, R J  
 PATENT ASSIGNEE(S): (CORP) CPC INT INC  
 COUNTRY COUNT: 13  
 PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
EP 49009	A	19820407	(198215)*	EN	7
R: DE FR GB IT NL SE					
NO 8103054	A	19820413	(198218)		
NL 8005184	A	19820416	(198219)		
FI 8102819	A	19820430	(198220)		
DK 8104026	A	19820503	(198221)		
JP 57080468	A	19820520	(198226)		
BR 8107012	A	19830531	(198328)		
CA 1165059	A	19840410	(198419)		
EP 49009	B	19860416	(198616)	EN	
R: DE FR GB IT NL SE					
DE 3174400	G	19860522	(198622)		
KR 8801393	B	19880730	(198848)		

PRIORITY APPLN. INFO: NL 1980-5184 19800917

AB EP 49009 A UPAB: 19930915

Prepn. of a novel **starch** glue contg. 20-45 wt.% **starch** (as dry material) is carried out by a modified Stein-Hall method. The Stein-Hall method comprises gelatinisation of a part of the **starch** in water in an alkaline medium, followed by addn. of the rest of the water and **starch** and, if desired, the usual additives (esp. boran cpds. and/or resins for water-resistant glues) under such conditions that nogelatinisation occurs. In the modified process the gelatinised **starch** is decomposed by addn. of a water-sol. **oxidant** in situ at 10-100 (pref. 50-95) deg. C at atmos. pressure.

The **starch** is pref. native **starch** and the **oxidant** is pref. added to the mixt. during the first phase of gelatinisation of a part of the **starch** in the alkaline medium.

The water-sol. **oxidant** is pref. a hypochlorite, perborate, persulphate, bromate or H<sub>2</sub>O<sub>2</sub>, opt. used together with a **catalyst**. The pref. **oxidant** is Na perborate used together with a Cu sulphate **catalyst**.

The glue can be prepd. in situ by the user (e.g. corrugated cardboard manufacturer) using an open container. Only a thin layer of the glue need be applied to obtain the same adhesion as with prior art glues. Since there is less water to be evpd., the cardboard mfg. machine can be run at higher speeds.

L133 ANSWER 14 OF 16 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1976:562290 HCAPLUS

DOCUMENT NUMBER: 85:162290

TITLE: Peroxide thinning granular starch

INVENTOR(S): Lotzgesell, James A.; Moser, Kenneth B.; Hurst, Thomas L.

PATENT ASSIGNEE(S): Staley, A. E., Mfg. Co., USA

SOURCE: U.S., 7 pp.  
 CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	US 3975206	A	19760817	US 1974-524727	19741118
AB	Modifying granular starch (I) [9005-25-8] or hydroxyethyl starch [9005-27-0] with H2O2 in the presence of metal ion and in the absence of buffering agents increased their alkali fluidities. Thus, thinning corn I with 0.23% H2O2 and 0.03% FeSO4.4H2O based on I wt. at pH 3.2, until all of H2O2 was used up, gave product with alkali fluidity of 71 ml.				

L133 ANSWER 15 OF 16 WPIDS (C) 2002 THOMSON DERWENT  
ACCESSION NUMBER: 1976-11080X [06] WPIDS  
TITLE: Depolymn of granular **starch** - by reaction with **hydrogen peroxide** in neutral aq soln contg **cupric ions** and alkali metal- or ammonium chloride.  
DERWENT CLASS: A11 A97 D17  
PATENT ASSIGNEE(S): (STBR) STANDARD BRANDS INC  
COUNTRY COUNT: 2  
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
US 3935187	A	19760127	(197606)*		
CA 1036594	A	19780815	(197835)		

PRIORITY APPLN. INFO: US 1973-408030 19731019; US 1974-496609  
19740812

AB US 3935187 A UPAB: 19930901  
Granular **starch** is depolymerised by reacting it with **H2O2** in an aq. mixt. in the presence of **cupric ions** and an alkali metal or ammonium chloride while maintaining the pH of the aq. mixt. at 5.5-7.0 by the addition of alkali, the reaction conditions being such as to maintain the granular structure of the **starch**. Prod. is readily susceptible to pasting on gelatinisation, and films formed from it have good clarity. Prod. is esp. useful in papermaking.

L133 ANSWER 16 OF 16 WPIDS (C) 2002 THOMSON DERWENT  
ACCESSION NUMBER: 1972-28635T [18] WPIDS  
TITLE: **Hydrogen peroxide** thinning agent - with **copper ion** in prepn of **starch ester**.  
DERWENT CLASS: A11 D17  
PATENT ASSIGNEE(S): (GRAI) GRAIN PROCESSING CORP  
COUNTRY COUNT: 1  
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
US 3655644	A		(197218)*		

PRIORITY APPLN. INFO: US 1970-43211 19700603

AB US 3655644 A UPAB: 19930000

The ester is obtd. by treating an aq. **starch** slurry at 80 degrees-130 degrees F and pH 7-12 with 0.1-3.0 wt.% **H2O2** (relative to the **starch**) and 5-100 pts. wt.  $\text{Cu}^{2+}$ /1,000,000 pts. wt. **starch**. Excess **H2O2** is removed by a reducing agent and an acylating agent is added to produce the thinned **starch** ester. The ester has a superior colour and the process has teh advantages that derivatization, thinning and bleaching are conducted in the same equipment without the need of acid-resistant appts., yields are higher and filterability is improved.